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biological diversity through research, education,
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LIVING BIRD

WINTER 2003 VOLUME 22 NUMBER 1

GREETINGS FROM SAPSUCKER WOODS

On a cold December morning in 1956, Lab director Arthur "Doc" Allen, codirector Peter Paul Kellogg, and their staff were busy moving boxes into their new facility at Sapsucker Woods and unpacking.

It was an exciting moment. Since its founding in 1915, the Lab had never before had a home of its own. In the early 1950s, Doc Allen's friend, Lyman K. Stuart, had asked him what his dreams were for the future of the Lab. He replied that he envisioned a beautiful building set beside a large pond in Sapsucker Woods. It will have "great big windows," said Allen, "where people can sit and watch waterfowl and look into the woods."

With Lyman K. Stuart's help, Doc Allen turned his dream into a reality, and on May 18, 1957, the Lab held the formal grand opening of its new Sapsucker Woods facility. The staff was tiny—in fact, it was largely a family affair. In addition to Allen, Kellogg, William Dilger, and Sally Hoyt (Spofford), there was Doc's wife Elsa (volunteer librarian), his son David (Sapsucker Woods Sanctuary manager), and Kellogg's wife, Byrl (volunteer sound librarian). Together they sowed the seeds that eventually blossomed into today's Lab of Ornithology, with a staff of well over 100 involved in a wide range of projects in bird study and conservation.

Now, 46 years later, we are in a similar position again as we prepare to move into our new Sapsucker Woods facility—a building five times the size of the one Doc Allen welcomed visitors to in 1957. We begin the big move in February 2003, and the grand opening is set for June. We'll be announcing the date soon and hope many of you can join us then.

This is an exciting and historic time at the Lab as we carry Doc Allen's dream into a new century of bird study.

Tim Gallagher
Editor-in-Chief

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by E. Thomas Gilliard

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Front cover: An adult male Merlin sits out a brief snow squall in Alaska. Photograph by Michael Quinton/Minden Pictures.

Right: A nestling Harpy Eagle strikes a threatening pose as a vulture flies close to its nest. Article on page 32. Photograph by Tui De Roy/Minden Pictures.

Back cover: The Northern Hawk Owl is unmistakable with its black-bordered facial disk, long tail, and somewhat falconlike profile. Photograph by Michael Quinton/Minden Pictures.

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WINTER 2003 VOLUME 22 NUMBER 1

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Letters

COLORFUL KINGFISHERS

I enjoyed Jack Conner's article on the colorful female Belted Kingfisher versus the relatively monochromatic male ("The Mystery of the Fisher Queen," Autumn 2002). I wondered as I read your article about "reversed sexual dimorphism" whether the visual perception of the Belted Kingfisher has been studied. Burkhardt and colleagues, for example, have shown that some birds have retinal cones that are especially sensitive to the ultraviolet end of the spectrum, and they suggest that "Some basic general principles of colour vision indicate that plumage colours are tuned to avian colour vision." (Finger, E., and D. Burkhardt. 1994. Biological aspects of bird colouration and avian colour vision including ultraviolet range. *Vision Research* 34:1509-1519.) As colorful as the female kingfisher appears to our human vision, one wonders whether the coloring of the male is more attractive to the specific retinal sensitivity of the dimorphic female of the species.

David A. Drachman, M.D.
Professor of Neurology
University of Massachusetts
Medical School

HUNTERS HEARD FROM

As a hunter for most of my life and a supporter of the Cornell Laboratory of Ornithology, I take exception to Barbara Novelli's implication that hunters cannot also be conservationists, ecologists, and birders ("Letters," Autumn 2002). Aldo Leopold, one of the nation's most creative conservationists and ecologists, was a hunter. Ms. Novelli makes the logical fallacy of suggesting that because she saw one group of "hunters" slaughtering Snow Geese that hunters might not be expected to work with birders on issues of mutual interest. Hunters worthy of the name will have an interest in not only the conservation and expansion of habitats but in the preservation of species of all kinds.

Les Brumfield
Kentwood, Louisiana

I found the letter from Barbara Novelli highly inflammatory. This is the type of attitude that keeps conservationist and hunters divided. Your publication of this letter makes Lab of Ornithology members who hunt look bad. I started my association with wildlife and hunters 52 years ago, growing up on a farm. Yes, there are some hunters out there just going for a trophy, just as there are some bird watchers who only wish to tick off a bird on a list and run to the next lifer. Most hunters I know eat the meat they shoot. Obviously, Ms. Novelli finds Ducks Unlimited to be an unworthy organization with alterior motives—the group's purpose being only to lure birds to an area to be killed. Maybe she missed the fact that Ducks Unlimited has preserved a lot of land—maybe even the wetlands she professes to enjoy so much. This money doesn't come just from hunters, some of us join organizations like this so that our dollars will preserve land, for nongame as well as game species.

B. J. Brookman
Erwinna, Pennsylvania

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send email to <livingbird@cornell.edu>.

In Memoriam
Sally Hoyt Spofford
(1914–2002)

The Lab of Ornithology lost a dear friend this past October 26 when Sally Hoyt Spofford passed away. Sally was here all through the Lab's formative years in the 1950s and '60s, as it made the transition from an informal assemblage of Cornell professors and graduate students to a distinct program with its own board of directors and a building at Sapsucker Woods.

Sally had been interested in birds since childhood, but she first came to Cornell in 1939 to pursue a Ph.D. in embryology. After meeting Arthur "Doc" Allen and taking some classes with him, however, she decided to get a doctorate in ornithology.

Sally met Southgate Hoyt, another graduate student in ornithology, and they married in 1943. World War II interrupted their studies. He became a medic in military hospitals, and she worked as a civilian medical technician. They returned to Cornell after the war and finished their doctorates in 1948. Her husband was a promising ornithologist who had completed an important study on the Pileated Woodpecker, but he died tragically young of cancer in 1951. (The Hoyt Pileated Woodpecker Trail at Sapsucker Woods is named in his honor.) Sally soon after became Doc Allen's assistant.

A few years later, Lyman K. Stuart arranged for the purchase of Sapsucker Woods and the creation of a Lab of Ornithology building. Sally often spoke proudly of those early days. She was the bookkeeper of the Cornell Trust for Ornithology, which then funded the Laboratory, and she helped choose the Lab's first board of directors.

Sally often substituted for Doc Allen or Peter Paul Kellogg on the Lab's radio program, "Know Your Birds," heard locally each Saturday morning. She coauthored two bird guides, *Enjoying Birds Around New York City*, published in 1966, and *Enjoying Birds in Upstate New York*, published in 1968.

At the end of each Monday-Night Seminar at the Lab, Sally would invite the attendees to come to her home for cookies and conversation. That's how she met Walter Spofford, a neurosurgeon who lived in Syracuse.

In addition to being a medical doctor, Walter was a recognized authority on the Golden Eagle. Sally and Walter married in 1964. A couple of years later, the two traveled throughout the Southwest on vacation, searching for an ideal area to live when they retired. They explored Cave Creek Canyon in southeast Arizona and found they loved it.

After she retired from the Lab in 1969, Sally and Walter began seriously looking for a home in Arizona. They finally bought a 13-acre ranch in Portal and dubbed it Rancho Águila. They immediately hung up more than two dozen bird feeders and started planting bird-friendly shrubs, building brush piles, and setting up birdbaths. Their yard list boasted more than 200 species, including some difficult to find hummingbirds.

Sally and Walter put up a sign proclaiming "Birders Welcome" and set out chairs, checklists, and birding information for their visitors. Their yard quickly became a major destination for visiting birders—a place where many people found life birds. Sally always delighted in reading the comments people wrote in her guest book. After Walter's death in 1995, she continued to welcome birders.

Throughout her life, Sally Spofford had a firm commitment to conservation. She and Walter donated much of their land in Etna, New York, to the Finger Lakes Land Trust, and some of their Arizona property is now part of The Nature Conservancy's Portal Preserve.

CORNELL LAB OF ORNITHOLOGY ARCHIVES

Sally watches birds out the window of the Lab's Stuart Observatory in the 1950s.

Thanks to Mary Schaub, a protégé of Sally's, the director's office at the new Lab of Ornithology facility has been named in honor of Sally Hoyt Spofford. She was aware of this honor and was delighted.

Sally and Walter Spofford are laid to rest at a place called Paradise, Arizona, beneath the shadows of their beloved Chiricahua Mountains. ■

Flying Field

STATE BIRDS

by Mel White

Creating a more inspired list of "official" birds

Like every Southerner who's ever slammed a car door in the middle of a quiet summer night, I like mockingbirds. I like them when they serenade the neighborhood at midnight, and I like them when they back down Blue Jays at the feeder, and I especially like them when they dive-bomb cats trying to cross the yard.

Still, it seems a bit much that five states, all in the South, chose *Mimus polyglottos* as their state bird, back when such things were being decided. It must have been part of the whole moonlight-and-magnolias Dixie mythos: "Lordy, Bobbie Sue, hearin' that ol' mocker sing sho' makes my mouth water for a mint julep and a mess o' hushpuppies," etc., etc.

Okay, fine. I say, let Mississippi keep the mockingbird, but the other four states have to choose something else. Here in Arkansas, I've occasionally publicized my idea to make the endangered Red-cockaded Woodpecker the state bird, just to tick off the timber companies.

Yeah, like that'll happen . . . when the University of Arkansas changes its team name from the Razorbacks to the Cuddle Bunnies.

I started thinking about this not long ago when I came across a list of all the official state birds, and realized that I—like every other birder who's traveled much, I'm sure—have my own list of emblematic birds associated with places I've been. They're my personal state birds, which pop into my head when I see a Kansas license plate, hear about wildfires in Idaho, or get an email from my friend in Boston.

Take, for example, Florida, another state with the mockingbird as its official avian symbol. (Talk about an uninspired choice. . . .) Some birders might think of the gorgeous Roseate Spoonbill, or the natty White-crowned Pigeon, or the Ospreys that nest on telephone poles along the highways. The first bird I got excited about on my first visit to Florida was a Limpkin, feeding along the eponymous stream in Myakka River State Park. But, really, the Limpkin is too shy, dull, and just plain weird to be a really good state representative—even in a birder's imagination, where rarity trumps appearance. The same day, though, I saw my first Swallow-tailed Kites. A group of 10 appeared at dusk, swirling overhead as they fed, in a moment that remains one of the great thrills of my birding life. Now there's something Florida could put on its state seal, proudly, appropriately, and beautifully. It is, and always will be, the bird I think of when I think of going back to the Everglades and environs.

In a couple of cases, my private memories actually coincide with the official state birds. Scissor-tailed Flycatcher is perfect for Oklahoma; if you've ever driven through the prairies and Cross Timbers in fall, when the scissor-tails gather by the dozens along the roadsides, you'll never again be able to separate the place and the bird. And despite all the wonderful specialties I've seen in Arizona, the humble and abundant Cactus Wren still symbolizes the state for me. My first one, on my first day in Arizona, was singing from an ocotillo limb in Phoenix. In my mind, it hasn't relinquished that perch in 30 years. The song is to the desert what traffic noise is to New York City: a background sound whose very ubiquity makes us forget sometimes what an essential part of the environment it is.

New Mexico did well to choose Greater Roadrunner. Everybody, bird watcher or not, loves *el paisano*, and New Mexico is the only state to avail itself of that affection. I once had a memorably close encounter with one at Coronado State Monument, but the roadrunner isn't my New Mexico bird—pure happenstance determined otherwise. As I was driving past Capulin Volcano back in the 1980s, just cutting through the northeastern corner of the state on the way home from Colorado, I stopped to watch a Ferruginous Hawk hovering beside the highway. So this gorgeous raptor is forever imprinted on New Mexico's logo for me, even though it's not particularly characteristic of the state. Just so, I think of Snow Bunting in Massachusetts, Ruffed Grouse in Connecticut, Yellow Warbler in Tennessee, Western Kingbird in Kansas, Chestnut-collared Longspur in Nebraska, and Pinyon Jay in Utah—accidents of time and place all. But there you have it: sometimes you choose the bird, and sometimes the bird chooses you.

Some of my private state birds make a little more sense, ornithogeographywise. How about Boreal Chickadee in Maine, found on a happily remembered day in company with a friendly local birder? And by the way, might it be a better official choice than the likeable but common-as-dirt black-capped? How about Great Gray Owl in Minnesota, seen in a stunning view just about a mile from the Canadian border? Is it more of a state specialty than the oh-so-common Common Loon? Isn't wise better than crazy? Maybe not; loons are veritable icons of the north woods, not to say the heart of a niche industry. You don't see that many owl doormats, owl coffee mugs, owl bumper stickers, owl keychains, owl doorknockers, owl toothbrush holders. . . . Minnesotans are probably permanently married to their loons.

As I write this, I'm planning a trip to Texas, which in the birder's geography book would have not one state bird (officially the mocker, again) but at least four, to match its deservedly famous birding regions. There's the lower Rio Grande Valley, which to me brings to mind the flashing yellow tail feathers of the showy Green Jay. There's the Hill Country, inescapably linked to the Golden-cheeked Warbler, which nests nowhere else. There's Big Bend, for which I confess I have great trouble choosing just one bird—the memories are just too many. I run through an imaginary slide show: Zone-tailed Hawk, Hooded Oriole, Varied Bunting, Elf Owl, Gray Hawk. The obvious choice is the near-endemic Colima Warbler, everybody's Big Bend target species, but I finally settle on Lucifer Hummingbird, a male feeding on the yellow blooms of a century plant. Oh, yeah.

But I'm heading for the Texas coast, home to a memorable "state" bird, seen in most appropriate circumstances. At least, I don't *think* I'm being too cruel.

It's been more than a quarter-century since I made my first trip to the coast, and it would take some serious study to figure out how many times I've been back since. In some ways it's the opposite of Big Bend, which has a zillion acres of wild open space and a few pockets of civilization. The Texas coast has pockets of birding habitat scattered among cities and towns, busy highways and crowded beaches, rice fields and cattle pastures, harbors and oilfields. For every big natural area like Anahuac National Wildlife Refuge, there are a dozen compact city parks, side roads, boat ramps, weedy fields, and tiny woodlots where people see birds.

The first time I drove to the Gulf Coast was actually my first real out-of-state trip dedicated just to birding. In those days, waders such as Great and Snowy egrets and Little Blue Herons weren't nearly as common where I live as they are now, so seeing numbers of them in roadside wetlands was an indication of things to come. Many of the typical coastal birds were new to me, from the Willets and Royal Terns on the beaches to the Tricolored Herons on the mudflats. My first American Bittern was standing in a ditch along the highway. My first Roseate Spoonbills flapped overhead at dusk as I waited in line to take the ferry to Galveston Island, and they couldn't have seemed any more exotic if they'd been emissaries from Alpha Centauri in a pink flying saucer. Black Skimmers, Sandwich Terns, Long-billed Curlews, American Avocets . . . everyday stuff to people who live on the sea, but it felt like a birdy wonderland to me.

Now, with all these species to choose from—like American Oystercatcher, for goodness sake—what memory has embedded itself in my consciousness, so that it comes to mind unbidden whenever I think of the Texas Gulf Coast?

If you've driven from Port Arthur to Texas Point National Wildlife Refuge and Sea Rim State Park, you know you have to traverse a vision of industrial hell to get there. Highway 87 passes through, and even under, a petrochemical complex of tanks and pipes, flaring gas that lights the night sky, and air so vile it seems you could run your lawnmower with it. After a few minutes you emerge onto a junky stretch of road, paralleling the Intracoastal Waterway, along which ships and barges chug, carrying who-knows-what to and from the factories and refineries of Houston and southern Louisiana. (Right *here* is where I saw my first White-faced Ibises, and right *there* my first Boat-tailed Grackles.)

So it happened that, in this stinky concrete-and-steel excrescence created

TOM VEZO

Every Southerner likes the mockingbird (above)—still, it seems a bit much that five states, all in the South, chose the species as their state bird.

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in part by the Fiat I was driving, I pulled over beside a tank farm and put my binoculars on a Black-necked Stilt. And it's this image, of this sleek bird with its ludicrously spindly legs feeding in the shadow of a looming white oil tank, that for me adorns the Official Seal of the Texas Gulf Coast: stilt, rampant, on a field of hydrocarbon.

I know this is in a way unfair. I've watched Greater Prairie-Chickens dance on the coastal grasslands, Reddish Egrets feed on lonely beaches, and Magnificent Frigatebirds hang in the air over bays. I've seen White-tailed Kites hover and Swainson's Warblers skulk, Least Bitterns clamber through the reeds, and Crested Caracaras scavenge in the savannah. I've seen Whooping Cranes, which would certainly make an appropriate poster bird for the wild and precious parts of the Texas coast.

But there's something about that lone, fragile stilt finding a place for itself in the monstrous refinery complex that symbolizes the essence of the despoiled, enduring coast: the Snowy Plovers on Galveston's beaches, the warbler flocks in the remnant oak mottes, the spoonbills in the stock ponds.

I don't mean this to be too pejorative, or sarcastic, or even ironic. I like the Texas Gulf Coast. I like the funky seafood dives and Mexican diners and Vietnamese restaurants. I like the miles of sometimes lonely roads in Anahuac, San Bernard, and Aransas refuges, and I like walking down the crowded Galveston seawall. I like searching for White-tailed Hawks along remote farm-to-market highways, and I like the spectator-sport conviviality of April at High Island.

Although my personal list of state birds may have more aesthetically pleasing examples—Clark's Nutcracker perched atop a spruce in the Colorado Rockies might be the champ—there are none I recall with more affection than that Black-necked Stilt, and there's no place I've had more happy birding experiences than the Texas coast. I'm headed that way again soon, and I can almost smell the salt marsh already—and the broiled red snapper, too. ■

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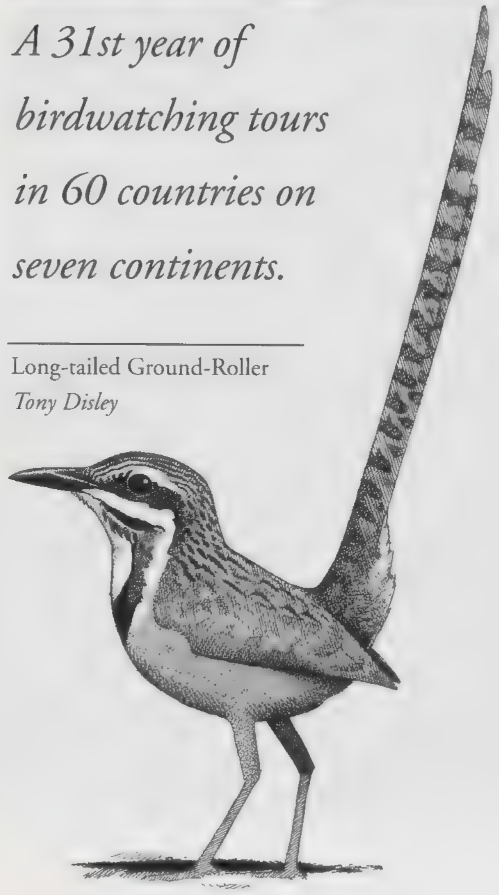

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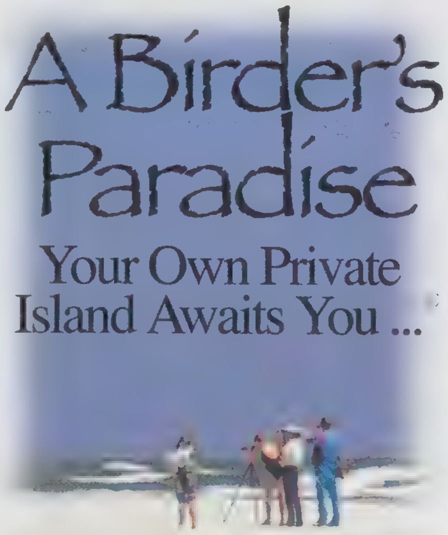

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The Bony Treasure of Funk Island

BY E. THOMAS GILLIARD

A determined pair of fledgling ornithologists braves stormy seas and treacherous shoals to visit the Great Auk's final stronghold

While researching an article about extinct species, I came upon this gem of an essay published in Discovery: Great Moments in the Lives of Outstanding Naturalists, *edited by John K. Terres (Philadelphia: J. B. Lippincott. 1961). Written by E. Thomas Gilliard, then associate curator of birds at the American Museum of Natural History, it vividly captures the reckless exuberance of youth, the adventure of field ornithology, and the great tragedy of extinction.—Tim Gallagher*

It was a hot summer afternoon some years ago in the laboratories of the American Museum of Natural History in New York City. As usual at this season, the Bird Department was an attraction for visiting ornithologists from many parts of the world. This seasonal influx had become heavy since our accession of magnificent collections of bird skins originally amassed by Lord Rothschild for his Tring Museum in England. His scientific specimens, together with our Museum material, some of it going back to John James Audubon, had, of recent years, made the American Museum and its bird collections a foundation piece for the scientific and popular bird literature of much of the world.

That afternoon on the fifth floor, I noted a stranger working under the west windows, a man with a weathered countenance. I soon learned that this was Harold S. Peters, a government field biologist from Atlanta, Georgia. He told me that he was doing research for a book on the birds of Newfoundland, which was soon to be published by the Newfoundland government. We spoke briefly of the richness of the animal life there. Peters had traveled widely in Newfoundland gathering his data.

The Great Auks once numbered in the millions, but they were slaughtered mercilessly for their feathers in the early 1800s. Funk Island, off Newfoundland, was their final stronghold. Illustration by John James Audubon/Courtesy Cornell's Division of Rare and Manuscript Collections.

BHL

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As it happened, I had local knowledge of quite a few of the places he mentioned, and this clearly perplexed him. Turning quizzically toward me, he asked, "Ever hear of the Funks?"

The Funks indeed: three rocks among the thousands fringing the rugged shores of Newfoundland—three rocks some 30 miles off the northern coast, two awash and usually covered with breakers, the third with a headland rising less than 50 feet above the sea in the path of the Labrador current, with its wallowing, wooshing train of icebergs.

A surprisingly intuitive question, I thought, but before I could give my simple answer, exciting scenes of a youthful treasure hunt flashed across my memory. In retrospect, I saw two tireless youths in a small rowboat throwing caution to the devil as they approached a rocky islet through a breaking, frigid sea—an islet in the midst of an infamous ship graveyard. I saw them leap from the stern of the boat as it teetered on the top of a wave, inches from a rock face, and I saw them cling to a ledge as the boat dropped away like an elevator. Next, I saw them scramble to the summit of the island, flushing kittiwakes, a kind of gull, from their cliff nests and driving a path through a crowded city of nesting sea birds that included murres and Razorbills. Finally, in memory, I saw them fall on their knees on an acre-sized plot of earth, riddled with the nesting burrows of puffins. There the two youths picked up bones—bird bones. These they compared carefully with models they had carved from the wood of white pine nearly a year before, making exact replicas of certain bones of the Great Auk in the collection of the American Museum of Natural History.

> *Funk Island is a flattish granite rock rising 46 feet, half a mile long, a quarter-mile wide in a seldom-visited sea filled with shoals. We were not alarmed by any of these things. We were at that age when nothing seems impossible.*

Then I remembered how we two youths had shouted and begun a wild victory dance. With no handy goal posts to pull down, we fell in a flailing knot, trying, it seemed, to mash one another into the dirt of that bleak island. Certainly, I thought, no more incongruous sight had ever been seen at this tragic spot, the place where the Great Auk had been slaughtered into extinction.

For an instant, I felt again the boundless enthusiasm of that exuberant victory dance. And then came flashes of the trials that had preceded it, which had served to make the adventure so sweet.

These I could have unfolded as if they had occurred the day before. Samuel Knox George, my long-time friend and boyhood neighbor from Maryland—then a Princeton student—and I had already engaged in ornithological explorations in climbing to eagles' nests and in searching for rare birds. We were at a stage where we craved adventure, but we had no backers and little money.

Actually we had saved our money for most of a year and had accumulated a total of nearly $300. With this, we planned to drive Sam's 1933 Ford from New York to North Sydney on Cape Breton Island, and from there to embark, by cheapest ticket, on the *S.S. Caribou*, the Newfoundland railroad ship that made a weekly connection with Nova Scotia. Then we would ride two days on the narrow-gauge railroad from Port aux Basques in southwestern Newfoundland to the northernmost part of the rail line, a spot called Gander Station. We had selected this place because it was geographically closest to Funk Island, but that island was more than 100 miles off.

Today Gander is an internationally famous airport. When we arrived there, it consisted of a cluster of low houses and a wharf connected by narrow channels with semiprotected waterways through which one could travel in small boats to the hundreds of peninsulas and islets forming the broken coastline of northern Newfoundland.

Two pup tents and two packs of camping gear and warm clothes composed our total outfit for this frugal expedition. Also, we had $100 carefully tucked away for any skipper who would drop us off on Funk Island, preferably for a week, and then take us safely ashore again.

This was our plan. When I unfolded it to Dr. Frank M. Chapman, head of the Bird Department at the American Museum of Natural History, I was keenly disappointed to find him very much against it. Dr. Chapman believed the venture was too risky, and that it was ill financed. Then he almost cut the ground from under me when he said: "The whole plan seems designed to find the proverbial needle in the haystack. Even if you did manage to reach that low, storm-lashed island, there is very little likelihood that anything remains after all this time."

These objections caused us deep thought. We weighed the possibility of searching in other regions for remains of the Great Auk, but in the end we chose to tackle Funk Island in spite of Dr. Chapman's powerful arguments against it. We did this because our studies of the Great Auk, made before, and especially after consulting with Dr. Chapman, had indicated that Funk Island held our best chance of finding the bones of this extinct bird.

By the time we reached our decision there was very little we did not know about the Great Auk, also known as the garefowl, the penguin, the wobble, the Apponatz, and other less pronounceable names. The name penguin first belonged to the auk, we had learned, and was later transferred in error to the "penguins" of the southern oceans by sailors who failed to recognize any great difference between the flightless bird of the North Atlantic (which is a member of the gull stock) and the much more primitive flightless seabirds of the southern hemisphere (the 16 species of birds we now call penguins).

Thirty inches in length, resembling a medium-sized penguin, the black and white Great Auk for ages was a source of food and arrow tips to men of the North Atlantic. Auk bones had been found in stone huts constructed by primitive men some 4,000 years ago in the Orkney Islands. And Stone Age men doubtless killed them along the coasts of Scandinavia, for there is evidence that auks began breeding along the shores of Norway, Sweden, and Denmark not long after the final retreat of the glaciers, perhaps 9,000 years ago. But even longer ago, before the retreat of the ice, the Great Auk lived in the Mediterranean Sea. This is believed because among the oldest finds are bones from the island of Gibraltar. There in a cave in a rock known as "Devil's Tower" bones of the Great Auk were found. And in this same cave, but in another stratum, were found fragments of a Neanderthal boy!

Other ancient bone finds show that the Great Auk was common ages ago along the coasts of the north and west Atlantic. The itinerant ancestors of the Norsemen, the Indians, the Greenland Eskimos, and many other peoples killed this goose-sized bird for food. Bones found as far south as northern Florida in a village kitchen midden, bones taken from Indian middens scattered widely along the coasts of New England, including sites on the islands of Martha's Vineyard and Nantucket in Massachusetts, and in many places along the coasts of Maine and New Brunswick, confirm that the flightless Great Auk ranged widely. At least it did so on occasion, during its swimming migrations.

Our studies indicated that the Great Auk apparently always nested on small offshore rocks protected from four-footed animal predators by broad moats of salt water, and it kept pretty much to the shallow cold waters of the continental shelves. This had been a species which numbered in the millions, and, as we studied it, we were incredulous at its rapid demise. Had not these same auks been systematically "cropped" by primitive man for thousands of years—men using spears, arrows, traps, wooden dugouts, hide-covered coracles, blinds of all sorts? Yes, but his toll of them seemed not to have affected the survival of the Great Auk.

By contrast, modern man, unscrupulously collecting auk feathers for pillows and mattresses, brought doom to the species in less than a century. How had he done it? We found that men had killed them with clubs like so many corralled sheep. Following the killings, they boiled the birds on fires fed by the carcasses of those Great Auks already stripped of their feathers. This sorry chapter ended as follows: according to the record, the last killed of the Great Auks were two specimens, said to be a pair, shot on Eldey Island (one of a number of reefs lying 15 to 25 miles off the southwestern tip of Iceland) on June 3, 1844. They were shot just 10 years after the last one ever sighted off the European coast was seen at Waterford on the coast of Ireland. The last recorded appearance of the species was of a lone Great Auk seen at the Grand Banks, Newfoundland, in 1852. In earlier times Great Auks had nested on many of the North Atlantic Islands, including the Faroes, St. Kilda, the Orkney Islands, Lundy Island, and the Isle of Man. However, in recent times the only places where they appear to have bred were on Eldey Island and Funk Island.

Famed ornithologist Frank Chapman (above) tried unsuccessfully to talk the two young men out of their dangerous quest for Great Auk remains on Funk Island.

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Our studies indicated that Dr. Chapman was too pessimistic about the possible success of our venture. In fact, there were a number of indications that we would be looking for *anything but* the proverbial needle in the haystack, if we succeeded in reaching Funk Island. Our chief source of information was a report, yellowed with age, by F. A. Lucas, entitled "Explorations in Newfoundland and Labrador in 1877," made in connection with the cruise of the U.S. Fish Commission schooner *Grampus.* Lucas had written, "The feather hunters probably went to Funk Island in the spring and resided there until the seabirds had finished breeding, systematically killing all the Great Auks they could; and this was kept up until, like the Rytina, the Great Auk had been slaughtered out of existence. The extermination took place about 1840, and at that date American ornithology was in its infancy, so that not a single specimen of the Great Auk was preserved out of all the millions that were, and there are in existence only two stuffed specimens of the Great Auk from America." On another page, he added, "That the feather hunters must have plied their trade with great vigor is shown by the millions of bones scattered over an area of many acres. These bones, the report continues, "are most numerous along the crest of the island [Funk], where the upturned sod reveals vast numbers of bones, interspersed here and there with patches of charcoal, showing where the kettles swung in which the birds were scalded."

Who was the man who had written this report? Dr. Frederic A. Lucas was a former director of the American Museum of Natural History. However, when he wrote the report he was an assistant curator at the United States National Museum in Washington. So we went ahead with our plan despite Dr. Chapman's warning.

Funk Island had been discovered by the great French explorer Jacques Cartier on his first voyage to America in 1534. Cartier had visited the island, where his men killed a boatload of Great Auks. These he recorded in his journals as the Great Apponatz, and after Cartier's visit other men came, bent on plundering the auks for their guano, for food, and for feathers. However, only three naturalists had visited the island prior to our proposed visit: the Norwegian naturalist Peter Stuvitz in 1841, Professor J. W. Milne in 1873, and Dr. F. A. Lucas in 1887. None of these men were in time to see the living bird, although Stuvitz was only several years too late. All three had collected remains of the Great Auk.

Because virtually nothing had been saved of this bird, in 1887 Professor Spencer F. Baird detailed Dr. Lucas to accompany the U.S. Fish Commission schooner *Grampus* on a voyage of exploration "to northeastern Newfoundland and the Gulf of St. Lawrence, primarily to obtain, if possible, bones of the Great Auk." Of this mission Lucas wrote: "From a scientific viewpoint it was extremely desirable to secure bones of the Great Auk since up to 1887 there were but nine skeletons of that species preserved in museums, only one being in the United States, while the U.S. National Museum possessed but a single bone. Even viewed commercially a collection of Auk bones would be of considerable value since the small number of existing specimens had caused them to bring a high price whenever brought to the market."

The *Grampus* expedition, which was able to land parties on Funk Island on June 22 and June 23, 1887, was successful in obtaining about 10 nearly complete skeletons. One of these was sold to the Museum of Science and Arts, Edinburgh, for about $600, and one each was traded for valuable scientific specimens to the American Museum of Natural History and to the Museum of Comparative Zoology in Cambridge, Massachusetts.

Thus our research had shown that in 1936 some 18 nearly complete skeletons were all that were known to science. Incidentally, we also found that 79 birds and 81 auk eggs had been saved. Therefore Sam George and I thought there was a good chance that our $300 investment might be recoverable. In other words, our venture did have something of the flavor of a treasure hunt.

Like all young treasure hunters we were all too wont to overlook the danger. We took very lightly the advice of earlier visitors to the island. It was perhaps this aspect that alarmed Dr. Chapman the most. For example, Lucas had written that Funk Island was a flattish granite rock rising 46 feet, half a mile long, a quarter-mile wide, and that it emerged from a seldom-visited sea filled with shoals. We were not alarmed by any of these things. We were at that age when nothing seems impossible, and we hardly gave a second thought to the somewhat staggering differences between Lucas's well-equipped and adequately staffed expedition and our plan.

In June 1936, Sam George and I drove his Ford to North Sydney, Cape Breton Island, embarked on the *S.S. Caribou* to Newfoundland, and there managed to find a captain (Captain Coish of Fogo Island) to take us to the Funks (although his wife stood sobbing at his side as he made his decision!).

The accounts of our unusual success in finding many skeletal remains of the Great Auk were first published in a popular article in *Natural History* magazine in September 1937, and in a technical report in a 1937 issue of *The Auk*, official publication of the American Ornithologists' Union. In *The Auk* I had the pleasure of announcing our discovery on Funk Island of the fifth known New World breeding colony of the gannet, a bird which Cartier had found on Funk Island, but which was not seen there again until our visit. Indeed, Lucas had written, "The Auk, by the way, is not the only bird which has been extirpated on Funk Island, for the Gannet lives in name alone, although Cartier found it abundant."

We had some grim times, some close escapes, some hilarious adventures which will be with us all our lives. These occurred as we hiked along the bleak coasts of Newfoundland, sleeping in fields and shacks along the edge of a sea sprinkled with icebergs, trying to bargain with the Newfoundland cod fishermen we met. We lived mostly on fish and "canned terr," an awful concoction of Razorbill and assorted other seabirds that these fishing folk prepare like preserves at certain seasons of the year. Finally we found a fisherman with courage enough to risk a trip to the Funks—the shoals they all feared. These lay just over the horizon from where we were, or less than 50 miles from the nearest populated island.

To measure the dangers Lucas had warned us about, the following is pertinent: we were offering $100 for a two-day voyage to the Funks at a time and in a place where the local teachers boarded for *five dollars per month* in the very same homes of the seafolk who refused our $100 proposition!

Gilliard considered his journey to Funk Island the most pivotal point in his life. From then on, he was hopelessly hooked on the adventure and excitement of field ornithology and traveled the world over to study birds.

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When these facts became clear to us, we began to wonder if perhaps we were not a bit foolhardy. And we found ourselves listening wide-eyed to the tales of death on the rocks, and particularly to one about seven men who lost their minds and ran screaming into the sea from the cliffs of Funk Island when help finally reached them.

Sam George and I reached Funk Island on the sailing schooner *Trawler* under the command of Captain Coish in the afternoon of July 20, 1936. After some two hours ashore, during which time we worked like madmen, we had to leave because of the worsening conditions of the sea. That night we put further to sea to reach safe water, and the next day we worked back again through a fog to the island. Because we had failed to find skulls the day before, we made life miserable for the captain. As a result, he let us go ashore for another hour of furious work. Thus, with incredible good luck, the sea had abated enough to permit our landings, and on the second day we found the skulls.

One nearly complete skeleton, three fairly complete skeletons, and some six thousand bones of the Great Auk was the booty we raked and dug up.

These were some of the thoughts that flashed across my memory as I stood that day on the fifth floor of the Whitney Wing in the American Museum of Natural History. "Oh yes," I answered Peters, "Sorry, my thoughts seem to have wandered a bit. About the Funks: Yes, I know them." And then I told him that with a friend, Sam George, I'd found auk remains and gannets there in 1936.

Peters snapped his head up, eyed me, and then said slowly, "I've just come from there. I thought I was the first naturalist to visit the island since Lucas." Clearly he was stunned at my story, and I was sorry. Our conversation quickly turned to the island: the gannets had increased to a massive breeding colony; the auk remains were still much in evidence; the narrow ledge by which we had landed on the northeast cliffs was still there, also the great concentration of puffins, murres, Razorbills, Arctic Terns, and kittiwakes.

At length I left Peters to work on his report, and as I did so the thought flashed across my mind that Funk Island had meant a lot more than the finding of gannets and extinct auks. It was probably the main turning point in my life. It served to open a glorious career of ornithological exploration that has led me into some of the least-known parts of the world, including eight expeditions to the mountains of the Philippines, New Guinea, and New Britain and five expeditions to South America, all in quest of unknown birds, all to areas still blank on the ornithologist's map of the world—the map which thousands of naturalists since Linnaeus's time have been striving to complete.

I shall never forget returning to the American Museum with the auk remains. Sam and I put our prize, a nearly perfect skull, on a piece of jeweler's cotton, and bringing this, together with a liberal assortment of the bones, we knocked on Dr. Chapman's door. Chapman, one of America's greatest ornithological explorers, was then 70 years old, I should guess, but he still had the keen interests of the young explorer. He was a serious man, not given to idle talk, with extremely sharp ears and eyes. In his typically quizzical manner, he glanced at me as we entered and then at the tray I carried, fixing his gaze on the skull. After a full second, he stood up, smiled broadly, and extended both his hands, one to each of us.

That, I believe, was the most important moment of my life.

That winter I accompanied Dr. Chapman to Barro Colorado Island in Gatun Lake, Panama Canal Zone. Then in quick succession followed more expeditions, the first a mule-back trip over the Andes collecting birds, the second to the Lost World on the border of Venezuela and Brazil—to a mountain made famous that year by the discovery on its sides of the highest waterfall in the world, Angel Falls. Then on and on, for a quarter of a century now, leading a life of adventure and scientific exploration, to wilderness areas of the world, sometimes among people still living in the Stone Age, perhaps rarely to areas never trod upon by man, but always to areas which had remained, biologically, little known.

Sam George and I never recovered a dime of that $300, but no one can deny that we had found great treasure on the tragic Funks. ■

MIDNIGHT SCRAMBLE

BY GEORGE OXFORD MILLER

Ancient Murrelet chicks dash for the sea in the dead of night

Deep in the shadows of a primeval forest is not exactly where I expected to search for seabirds. Or for that matter, at night, under the darkness of a moonless sky, which is when we were scheduled to arrive at the Laskeek Bay research station in Canada's Queen Charlotte Islands. Unfortunately, a gale with 60-knot winds forced our boat into a protected cove for the night. We arrive in the morning too late to witness the young Ancient Murrelets (*Synthliboramphus antiquus*) making their frantic midnight dash for the sea. But we still have a lot to see.

Half the Ancient Murrelets in the world nest in the old-growth forests of Canada's Queen Charlotte Islands. Less than two days after hatching, the young leave their nest burrows under cover of darkness and make a perilous race to the sea.

LEFT: GEORGE O. MILLER. RIGHT: DONALD E. WAITE.

Charlotte Tarver, a volunteer researcher, meets our Zodiac when we beach on Limestone Island, a small member of the 138-island archipelago. For a week, we've been exploring the islands on the 68-foot *Island Roamer,* operated by Bluewater Adventures. The Queen Charlotte Islands, 80 miles off the coast of British Columbia, harbor Canada's densest populations of Bald Eagles and the Peale's subspecies of Peregrine Falcon (*Falco peregrinus pealei*), and more than one million pairs of nesting seabirds. Half the world population of Ancient Murrelets nests in the old-growth forests of the islands.

Tarver leads us into the forest to the Ancient Murrelet nesting colony. Beams of hazy light laser through the towering canopy of Sitka spruce and western red cedar. The largest trees date back 1,000 years. The Haida, who have lived here for centuries, call the southern half of the

GEORGE O. MILLER (2)

Queen Charlotte Islands “Gwaii Haanas,” Place of Wonder, and we easily see why. After the Haida and environmentalists halted logging in the southern half of the islands, Parks Canada established Gwaii Haanas National Park Reserve. The park area is protected from the clear-cutting that proceeds full blast on the northern islands.

Our steps on the cushioned trail make no noise. Like a rising green tide, a thick layer of feathery moss blankets the fallen limbs and logs that clutter the forest floor. We tread lightly. Deep within the tangle of roots and rocks, Ancient Murrelets huddle in their burrows, each with two eggs. On this small island alone, 1,500 of the pigeon-sized birds return each year to regenerate their species.

“The Laskeek Bay Conservation Society has monitored the Ancient Murrelets for 13 years,” Tarver tells us. She holds up a robin egg between her thumb and forefinger. In the other hand, she holds an Ancient Murrelet egg. It’s as big as a chicken egg.

“Ancient Murrelets and robins are about the same size, but look at the murrelet egg. It’s 22 percent of the bird’s weight. That’s like a 100-pound woman having a 22-pound baby. After the first egg, the female feeds at sea for a week to build up reserves, then returns and lays a second egg. Such an energy expenditure is close to the physiological limit for a bird that size.”

Tarver leads us to an unused burrow. The fist-sized tunnel extends about a meter underneath a cluster of moss-covered roots at the base of a tree. A rock covers a small plywood lid on an observation hole that opens into the nesting chamber. “We place a rock on the lid to keep ravens from sneaking in and eating the eggs. They sit in the trees and watch us monitor the nests. When we leave they hop down and try to pop off the cover. For them it’s like a fast-food take-out window.”

Little metal tags dot the dappled forest floor like pop tabs after a sloppy picnic. Each has a number identifying a nest burrow. This subterranean colony stretches for hundreds of meters. “We use high tech and low tech to monitor the nesting progress,” Tarver says with a grin. “We check 44 nests every day.” She sits beside the empty burrow, breaks a twig into inch-long pieces, and sticks them into the ground across the opening. “If a bird goes in or comes out, it knocks down the miniature fence.

“We can tell when a bird starts incubating by the temperature inside the burrow.” She points to a pair of wires coming out of the observation hole. “This is the high-tech part. We put a temperature probe in the nest after the first egg is laid. A week or so later the female lays the second egg and the pair starts incubating. On our daily rounds, we connect a thermometer to the probe and take a reading. When an adult is in the burrow, the temperature rises from about 7 degrees to 13 degrees Celsius. The eggs hatch 30 days after incubation starts.”

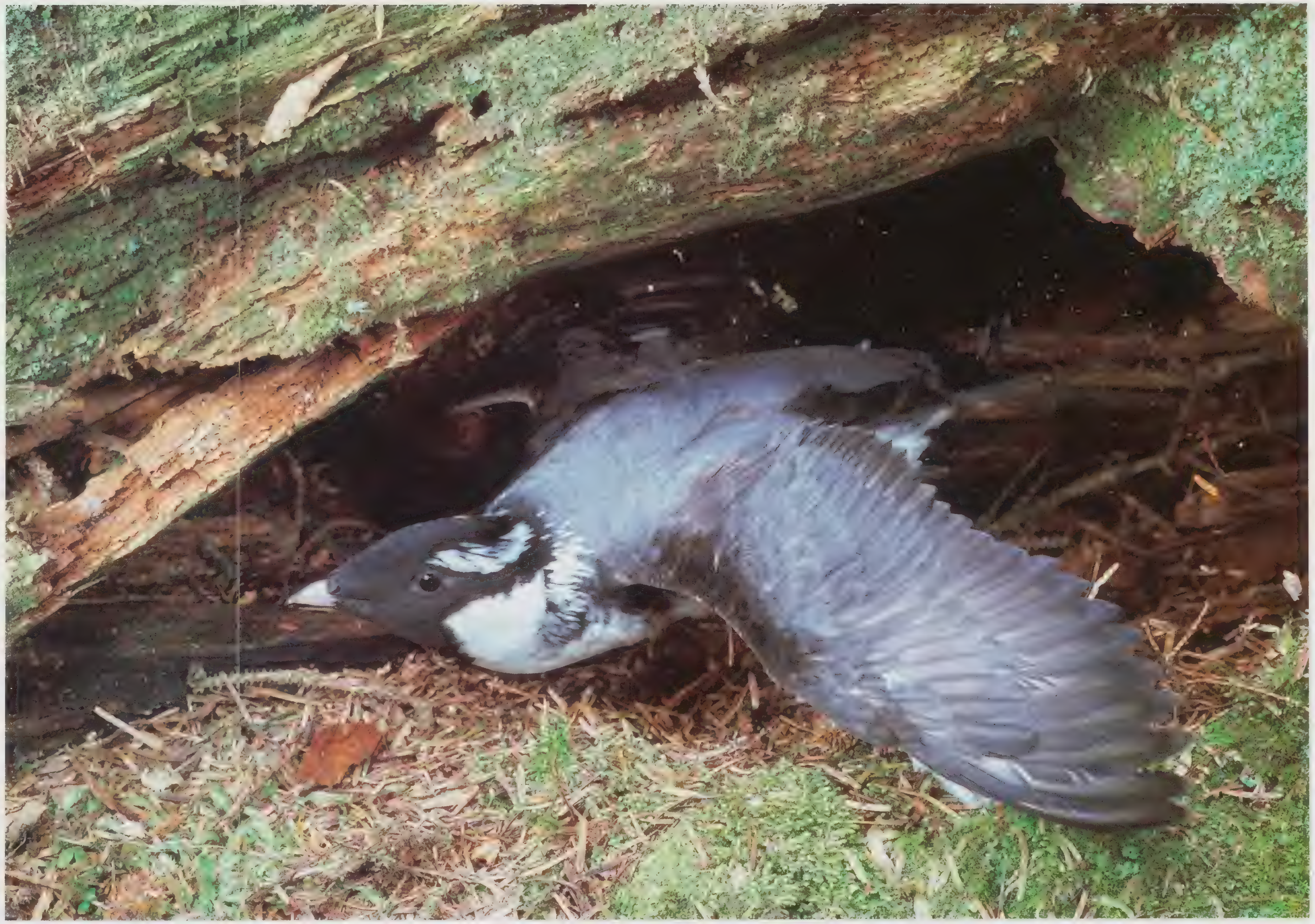
Ancient Murrelets, creatures of the sea first and air second, spend as little time on land as possible. On a previous evening, we spotted tens of thousands of these black-and-white birds bobbing in the waves as we sailed past Bolkus Island, another small member of the archipelago.

“The birds sit out in the water in gathering areas and socialize before going to the nests,” says Tony Gaston, a biologist with the Canadian Wildlife Service. Gaston has studied Ancient Murrelet and other seabird colonies in the Queen Charlotte Islands since 1984. “The adult murrelets arrive at the nest colony about an hour after sunset and stay until two hours before sunrise.”

The birds court on the nesting slopes and tree limbs at night. The forest echoes with the songs of the males throughout the night before egg laying and during incubation. At least nine different vocalizations have been recorded:

Charlotte Tarver (above left) holds up two murrelet eggs, which are amazingly large for a bird the size of a robin. At left, she checks a nest burrow thermometer on Limestone Island.

DONALD E. WAITE

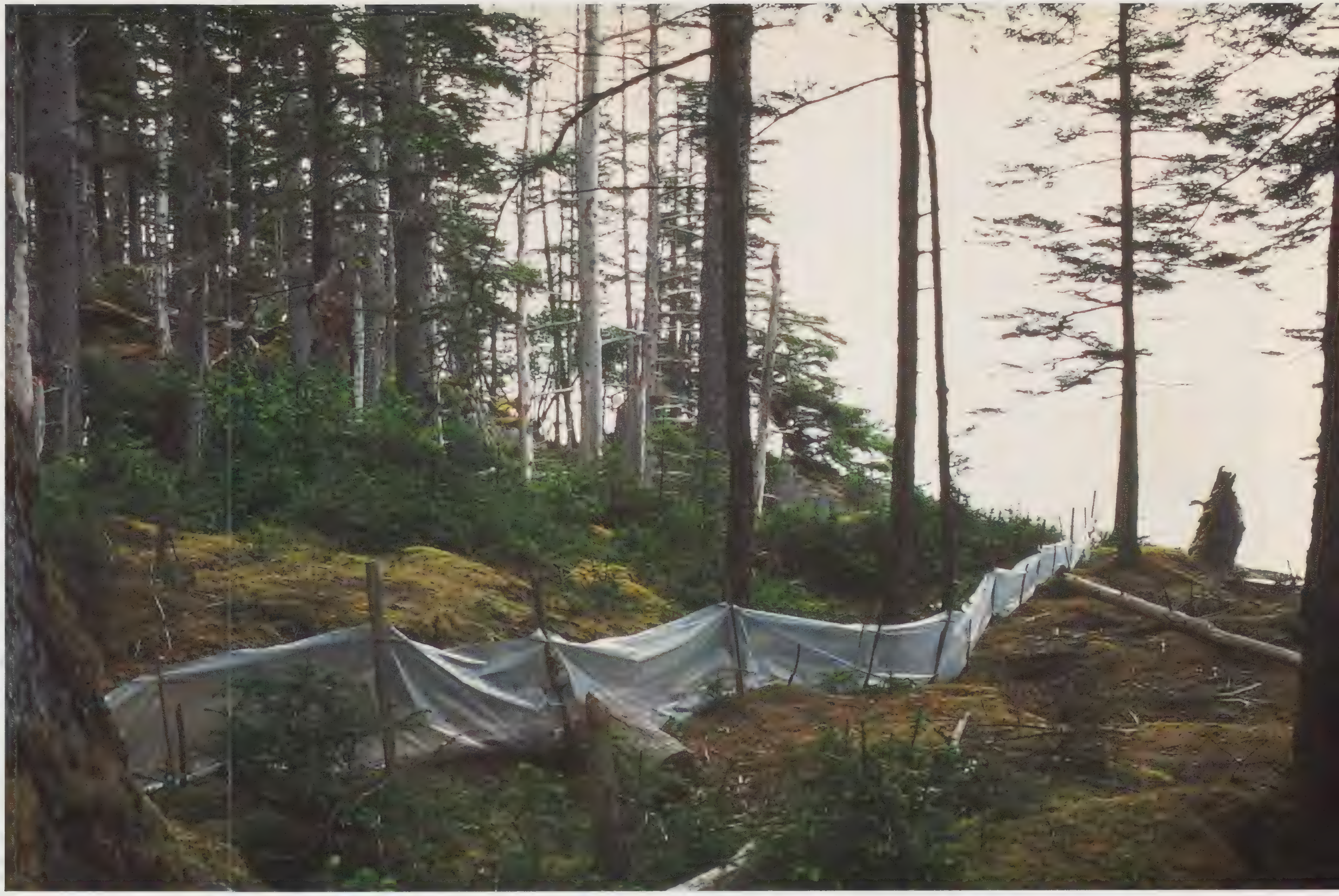


The nesting habitat of the Ancient Murrelets is a tangle of dense forest and moss-covered limbs. The burrows are about as large as a person’s fist and usually about a meter in length. Above, an adult Ancient Murrelet flies out of its nest burrow.

LASKEEK BAY CONSERVATION SOCIETY (2)

A murrelet chick fits easily into the palm of your hand (above left). A researcher measures the bill size of an adult murrelet (left).

J. SMITH/LASKEEK BAY CONSERVATION SOCIETY



A long, two-foot-high plastic fence (above) funnels the murrelet chicks into the waiting hands of the researchers, who quickly weigh, band, and release them.

a chirrup call, chip, bubble call, trill rattle, chatter, long whistle, short whistle, wheeze, and complex, variable songs sung by males from perches above the nests.

The 200-gram birds aggressively drive away any intruders from their burrows. Once incubation begins, the male and female share nesting responsibilities, switching off every 48 hours or so. A bump in the night usually means that a murrelet, so agile in the water, has crash-landed at its burrow to take its shift.

"Banding records show that the same individuals mate year after year and return to the same burrows," Tarver tells us. "One pair used the same nest burrow for nine years. We don't know how long they live, but a lot of seabirds live for decades. One shearwater lived for 52 years. We recaptured an Ancient Murrelet that was banded 13 years ago."

These long-lived birds begin life as an energetic puffball of feathers that, Gaston says, must run like a hare and swim like a seal with their first step from the nest. Besides speed, the murrelets' survival depends on stealth. The chicks' first view of the world is not of the sun, nor of the moon for that matter, but of the dark shadows of the midnight forest. The chicks abandon their nests between 11:00 P.M. and 3:00 A.M. the second night after they hatch.

"The two parents lead the chicks from the burrow and give a unique recognition call, which the chicks immediately learn," Gaston says. "Then the parents fly to sea. The chicks switch into a hyperactive state and race toward the ocean like clockwork mice wound too tight. They're really frantic, they run like blurs."

The chicks' mad scramble has a reason. Darkness hides them from Bald Eagles, Peregrine Falcons, gulls, and ravens, but not from Saw-whet Owls, river otters, rats, and raccoons. Their frantic journey normally takes about 20 minutes. But on Limestone Island, they face an additional obstacle. As they race down the slope toward a break in the rocks at water's edge, a two-foot-high plastic fence funnels them into the waiting hands of the researchers.

"The chicks are programmed to run, and they run right into our bag," Tarver says. "We band them with a unique number, weigh them, and then release them."

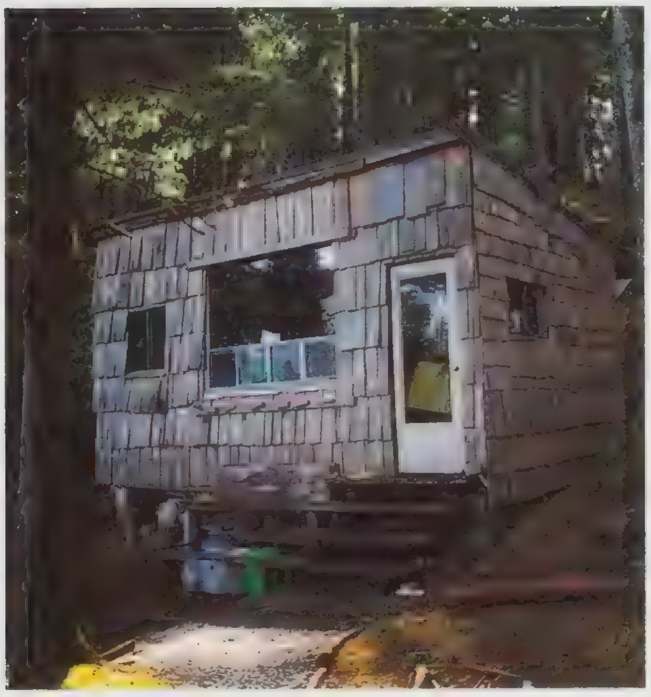
The chicks find the sea by orienting toward the diffused glow of the sky over the ocean. The researchers' flashlights don't seem to confuse them, nor does handling alarm them. "They respond just as they would to trying to get over a log," Gaston says. "The banding doesn't elicit the fear cry like an attack by an owl would."

Reaching the sea is only half of the treacherous journey for the tennis-ball-sized chicks. They tumble over the boulder-littered beach, sometimes over small cliffs, and plunge into the pounding surf. Then they must fight their way seaward and find their parents, which are calling somewhere 50 to 200 meters offshore. Murrelets reverse the typical bird-rearing strategy. Instead of bringing food to their chicks in the nest and prolonging the prime period of predation, they take their chicks to the food in the safety of the sea.

"It seems like a problematic strategy, but in fact very few chicks get left behind," Gaston says. "The chicks recognize their parents' call among the multitude of calling birds. Families manage to reunite 95 percent of the time." Once together, the parents and their chicks paddle nonstop for 12 to 18 hours, until they are two or three kilometers from shore.

"Considering the size of the chicks, it's an amazing accomplishment," Gaston says. "The chicks haven't eaten. They rely solely on the energy from the egg yolk. That's why the egg is so large—it's 40 percent yolk. Murrelet chicks have the largest energy reserve of any seabird."

By the time the chicks reach their new offshore home, they have exhausted their fat reserves but, by then, they are surrounded by a smorgasbord of zooplankton, copepods, and larval fish. "The parents feed the chicks for a month until they are old enough to dive and feed themselves," Gaston says.



GEORGE O. MILLER

A tiny cabin (above) serves as the research headquarters for the Ancient Murrelet study on Limestone Island. In addition to the murrelets nesting on the Queen Charlottes, many breed on Alaska's Aleutian Islands.

These amazing little birds have been our constant companions throughout our week-long exploration through the Queen Charlotte Islands. The birds arrive from their wintering grounds in the Sea of Japan by the end of March and start nesting by early April. Chicks hatch in May. Their breeding range extends from the Queen Charlotte Islands north through the Aleutians to Kamchatka, the Kuril Islands, the Sea of Japan, and the coast of Korea.

Approximately half a million Ancient Murrelets nest on 31 islands in the Queen Charlottes. The 17 colonies along the east coast of Moresby Island, mostly within Gwaii Haanas National Park Reserve, support 44 percent of the breeding population. Four other colonies on the Pacific coast of Graham Island account for nearly half.

"The largest concentrations occur on Frederick and Hippa islands off Graham Island," Gaston says. "With 40,000 pairs, Frederick Island is the largest known colony in the world. After the Queen Charlotte Islands, most of the world's population breeds in the Aleutians, but the U. S. Fish and Wildlife Service doesn't count them. Alaska is a black hole for population data on the murrelets."

Though Ancient Murrelets remain numerous, the Council on the Status of Endangered Wildlife in Canada has blue-listed the seabird with a "vulnerable" designation. Population studies such as the one on Limestone Island document severe declines, which are almost entirely due to introduced predators. Rats and raccoons decimate ground-nesting birds, while browsing black-tailed deer turn the forests into open, parklike environments.

Nesting colonies on islands with rats and raccoons have suffered annual declines as high as 23 percent. On Langara Island, half of the 80,000 burrows present in 1981 disappeared by 1993 due to egg predation by rats. This colony may have supported as many as 200,000 breeding pairs earlier in the century.

Rats arrived accidentally on ships, but early settlers deliberately established raccoons for the fur trade. "Raccoons have destroyed tens of thousands of seabird nests in the last few decades," Gaston says. "They caused a 30 percent loss on some islands between 1990 and 1992."

Unlike rats, raccoons can swim between islands about half a mile apart, which makes 50 percent of the Ancient Murrelet colonies in Gwaii Haanas vulnerable. Raccoons can't be eliminated from Limestone Island, and last year they destroyed 41 nests. But with periodic culling of the raccoons, the nesting colonies remain stable.

An extensive rat removal program has kept Langara Island rat-free since 1998, but the Ancient Murrelets are slow to rebound. "It's hard to get a handle on everything that controls population," Gaston says. "The 1980s and '90s were a bad period in the North Pacific for all seabirds."

This year, researchers banded 566 Ancient Murrelet chicks on Limestone Island, about average for the last decade. "We get an index of the population by counting chicks for a standardized time each year and assuming the numbers reflect the entire population," Gaston says. "Populations on islands without rats and raccoons remain stable."

Eighteen years of research have established a baseline for nesting dynamics and chick survival. "Now we're looking at survival rates of the adults at sea. We've been banding adults during the prelaying period since 1993. We need a dozen years of data before we can determine any trends."

After our visit on Limestone Island, we reboard the *Island Roamer* and sail off to our next adventure. Soon the sea around us looks like a geyser field. In every direction, the tail splashes and blows of humpback whales dot the water. A 40-ton creature swims over and investigates our ship. It floats beside us, dives under us, surfaces beside the Zodiacs in tow behind us, then breaches fully out of the water 10 meters to port.

Of course, I'm thrilled by the proximity of the leviathan, but the Ancient Murrelets have taught me that in nature majesty need not depend on size. The fine tuning of the murrelet's breeding biology to the special conditions of its environment is just as amazing as any breaching whale. ■

George Oxford Miller is a freelance writer and photographer and the author of several books. He lives in Clarksboro, New Jersey.

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Hammerheads

BY EMILY GERMANO AND SANDRA VEHRENCAMP

ILLUSTRATIONS BY JOHN SCHMITT

Why woodpeckers drum on your house

As the sun's first rays peek over the trees, the pale light sliding through your blinds to lay in wavy patterns across your pillow, you smile and turn over in bed. Just a bit longer until another busy day drags you from your quilt. But suddenly, *TAP! TAP! TAP!*—the sound bursts through your slumber like a jackhammer. You sit bolt upright and listen. *Tap! Tap!* The noise comes again. You throw on your robe and race out into the snow, wondering whether a construction crew might have come to the wrong address. Peering around the corner of your house, you see only a small black-and-white bird perched innocently on the eaves above your bedroom window. Then, *Tap-tap-tap-tap-tap!* the bird's head moves back and forth in a blur. You watch in amazement as it pecks away at your house.

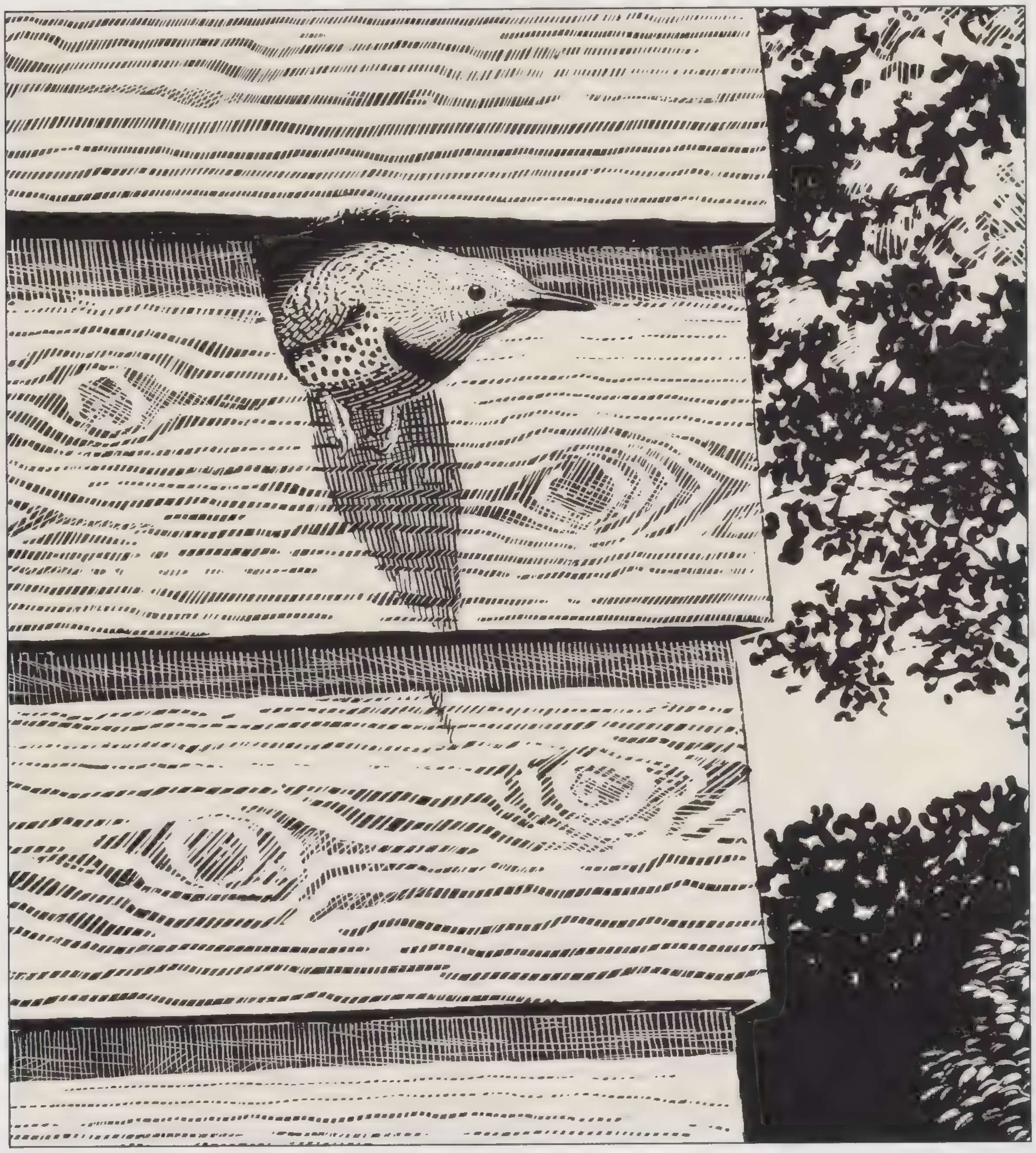
Woodpeckers are fascinating birds and an integral part of our natural environment. With their striking coloration, they are easy to spot and identify, making them some of the better-known backyard birds. The problem is how to remain on friendly terms with them when they move from knocking on your locust tree to knocking on your house. Although this may seem like a small or even a ridiculous problem, it is actually quite common in rural and wooded suburban areas.

Woodpeckers probably inflict thousands of dollars' worth of damage to homes across the country. The Cornell Lab of Ornithology receives numerous phone calls every year from harried homeowners looking for ways to keep woodpeckers from putting gaping holes in their homes' siding. The Lab recently began a research project, funded by New York's Hatch Program, to study the behavior of woodpeckers in suburban areas. We hope

North American woodpeckers, such as the Downy Woodpecker at left, cause thousands of dollars' worth of damage to houses, but homeowners can take preventive measures to help minimize the problem.

to find out why woodpeckers attack homes and how people can prevent them from doing so.

Six species of woodpeckers are common in the Northeast: the Northern Flicker, Downy Woodpecker, Hairy Woodpecker, Red-bellied Woodpecker, Pileated Woodpecker, and Yellow-bellied Sapsucker. Woodpeckers are not songbirds; they belong to an entirely separate order of birds, the Piciformes, and have several unique adaptations that distinguish them from other birds.



Houses with stained cedar clapboard located in a wooded area are particularly susceptible to woodpecker damage. Above, a Northern Flicker has bored right through the siding into the insulation to create a roosting hole.

Contrary to what you might think, woodpeckers do not get headaches from hammering on trees. Their thick skulls and powerful neck muscles enable them to deliver sharp blows without injuring themselves. They use their stout, chisel-like beaks for boring into wood. Their tongues, which are often covered with barbs or sticky saliva, can be extended a considerable distance to dislodge ants and insect larvae from deep crevices in wood and bark. When retracted, a woodpecker's tongue curls around the back of its head between its skull and its skin.

The tongue varies with the diet and mode of foraging of the species. Pileated Woodpeckers, which bore deep into timber, have shorter tongues with spearlike tips and backward-facing barbs. Woodpeckers that forage mostly on the ground, such as Northern Flickers, have tongues with flattened tips. Sapsuckers have brushlike tongues that hold the sap of trees through capillary action. Species that feed from crevices and surfaces of trees usually have longer tongues with bristles concentrated at the tip.

Most songbirds have three forward-facing toes and one backward-facing toe, whereas woodpeckers usually have two toes facing forward and two facing back. This is known as a "zygodactyl foot." Woodpeckers move up trees by hopping, using their short, stiff tail feathers as a prop. They work their way up a tree, peering and poking into every nook, and then either fly to a new area or glide down to a neighboring tree to begin foraging anew.

Woodpeckers typically eat insects, berries, nuts, and seeds collected from trees and shrubs. Northern Flickers usually feed on ground insects such as ants. Sapsuckers drill very small holes in trees to feed on sap. Although woodpeckers can perform a great service by eating insects such as wood-borers and bark lice that can harm trees, they can be pests when they start banging on houses, buildings, and utility poles. Woodpeckers drill holes for a variety of reasons: to build nesting and roosting cavities, to forage for insects, and to perform a territorial activity known as drumming.

Woodpeckers use tree cavities for both roosting and nesting. At dusk, the birds look for roosting cavities, either old abandoned holes or, more frequently, cavities they dug specifically as roosts. They excavate nest holes at the start of each breeding season—usually in April or May. Nesting and roosting cavities are generally only slightly wider than the bird and are either round, rectangular, or gourd-shaped. Woodpeckers are highly selective when they choose sites for their holes. They tend to look for dead trees that have a hard outer shell and a softer inner cavity. Some woodpeckers apparently find the soft cedar siding on many houses ideal.

When they forage for insects, woodpeckers tend to excavate in diseased, dying, or rotting trees, which are more likely than healthy trees to contain the wood-boring insects the birds seek. As they search for food, woodpeckers are capable of drilling anything from tiny rows of holes to huge yawning craters into trees, wooden utility poles, and even houses.

Drumming is the woodpecker's habit of hammering loudly and rapidly onto a resonating surface, such as a hollow tree branch, street sign, chimney, or the side of a house. Because woodpeckers do not have songs as such, drumming serves as a territorial signal similar to birdsong. Both male and female woodpeckers may drum.

We are currently trying to determine which kinds of siding are most vulnerable to excavation of nesting and roosting cavities, what home characteristics cause woodpeckers to commence foraging activities, and what qualities of natural and human-made materials make them attractive for drumming. We then hope to find deterrents that homeowners can use when woodpeckers turn from trees to houses. In our survey of homes in the Ithaca, New York, area, we have so far found that the kind of damage inflicted by woodpeckers depends on the type of siding, the color and type of sealant or paint, and how close the house is to wooded areas.

Any kind of siding is a potential instrument for woodpecker drumming, including aluminum siding and the trim and fascia boards on wood, brick, and stucco homes. Woodpeckers also frequently drum on metal downspouts, gutters, chimneys, and vents. This behavior is often more annoying than damaging, and it can be interesting to watch. If you hear a woodpecker drumming on your house, go outside and observe this remarkable territorial or breeding behavior. Listen for any accompanying calls the woodpecker may give and look around for its mate or a possible competitor for its territory. Drumming damage usually consists of tiny dents in the wood, grouped in clusters along the corners or fascia and trim boards of a house. The holes may sometimes be as large as an inch across and are generally round, cone-shaped, and shallow.

Woodpeckers usually build their nesting holes in the beginning of the breeding season, whereas they tend to bore their roosting holes in late summer and fall to prepare for winter. They excavate roosting and nesting holes most often in houses with clapboard or tongue-and-groove siding (or less often, resawn shakes, shingles, board-and-batten, and grooved plywood siding). Redwood and cedar are more vulnerable than composite wood. Nesting and roosting holes are large (1 to 2 inches in diameter) and often surrounded by smaller half-finished holes or clusters of tiny drumming holes. Where roosting and nesting holes are located on a house depends on the type of siding.

In cedar clapboard siding, woodpeckers usually drill at the seam between two adjacent clapboards. These holes are usually dispersed throughout the house's siding. Holes drilled into board-and-batten siding are usually on the inverted batten between the two adjacent boards; again, they are often dispersed throughout the siding, although the birds seem to prefer excavating in corners. Woodpeckers drilling into tongue-and-groove siding show a definite preference for corner holes at the seam between two vertical boards. Resawn shakes and shingles also are more prone to having nesting and roosting holes along the corners of the house. Usually these holes are placed between abutting shingles, where the bottom and top of two shingles meet.

When a woodpecker starts drilling nesting or roosting holes, it often makes several attempts, beginning an excavation only to leave off and start a new one just inches away from the first or in an entirely new location on the house. Perhaps the first site did not meet the specific requirements for a nesting or roosting site, so the bird tried another place. In this way, a house can quickly accumulate a number of holes.

While excavating holes, a woodpecker first digs through the outer siding, then into the plywood sheathing, and finally into the insulation. It is here that the woodpecker hollows out a cavity. Woodpeckers probably have a variety of reasons for building their holes in houses—heat trapped in a house's insulation provides extra protection from cold weather; holes on the sides of houses are safer from predators; too few suitable trees are available for nesting or roosting in the area; and houses are usually made from soft wood, which is easier for woodpeckers to excavate than natural cavities.

Although some homeowners want to evict their woodpecker tenants immediately, others are delighted to have an opportunity to watch activities that generally only take place close to the nest, such as courtship, copulation, and drumming. Later, after the eggs hatch, you might see the adults bringing food to their young. And eventually, you might catch sight of a nestling peering at you from the pocket in your house as it begs to be fed. Vigilant watchers may even see the young woodpeckers make their first forays into the world when they fledge.

Foraging behavior is also interesting. Some kinds of sidings, such as grooved plywood and shakes, are more susceptible to insect infestation and therefore attract foraging woodpeckers. Grooved plywood siding, made from sheets of plywood inlaid with vertical grooves, mimics the look of boards backed by battens. These grooves expose horizontal gaps in the core of the plywood where insects can live and reproduce. Woodpeckers searching for insects in this type of siding create almost perfectly horizontal rows of holes along the siding following the gaps. Wooden shakes and shingles also have many crevices that attract insects, thereby enticing woodpeckers. Insects follow cracks between adjacent shakes, going upward underneath the overlapping shake above to lay their eggs, hide, pupate, and spend the winter. Woodpeckers searching for these insects will drill straight lines of vertical holes (from three to six holes in a line depending on the size of the shake), directly up the middle of an overlapping shake.

Grooved plywood siding is designed to mimic board-and-batten siding. Unfortunately, the vertical grooves expose horizontal gaps in the plywood's core where insects sometimes breed. Woodpeckers searching for insects in this kind of siding often leave rows of horizontal holes, as the Downy Woodpecker (above) is doing.

During our survey, we collected insects from some of the damaged houses with shakes and grooved plywood siding and identified them with the help of Cornell entomologists. The most common insect was the leafcutter bee in the family Magachilidae. These native bees are not aggressive toward people and are important plant pollinators. They resemble common honeybees but are somewhat darker with lighter bands on the abdomen. Leafcutter bees are solitary; a single female digs out its nesting area, creates nest cells, and feeds her young. These bees tend to nest in soft rotted wood or small cracks and crevices within wood but do not cause any damage. The damage to houses occurs when woodpeckers hammer into a house's siding to get these choice morsels.

Grass bagworms were the second-most-common insect in the houses we sampled for insects. Their larvae resemble tiny caterpillars. They construct cases made from fragments of grasses and other plant materials, and when the larvae pupate, the case is attached to a tree trunk, a wooden fence, or the siding of a house. Woodpeckers also hammer on houses while searching for the treats hidden inside these inch-long cases.

A third type of insect we found at many houses was the carpenter bee. These large bees are attracted to all types of treated and untreated lumber. Carpenter bees are often confused with bumblebees, but carpenter bees are larger and have shiny black abdomens. Female carpenter bees drill small, perfectly round holes, about the size of a dime, into trees, fence posts, fascia boards, overhangs, and other wooden structures. They drill straight into the wood about an inch or two, then turn 90 degrees. This portion of the nest becomes the egg chamber. They lay single eggs in cells they have constructed within the nest chamber, place a mixture of pollen and nectar alongside the egg, and seal the cell with wood pulp. The egg hatches and the larvae develop into adults, chew through the seal, and emerge in late summer. The noise made by larval carpenter bees might attract woodpeckers, which chisel into the wood along nesting cells to get at the larvae. This activity creates telltale trenches and holes about one-half to one-inch deep along the wood.

The vegetation around your yard and neighborhood plays a major role in determining whether woodpeckers will damage your house. The more natural the surrounding area, the higher the density and diversity of resident woodpeckers that may find your house attractive. Houses in heavily wooded areas have a far greater chance of being damaged by woodpeckers than houses in open areas.

If you live in an area suitable for woodpecker activity and are thinking of painting or staining your house, you might want to avoid natural-looking stains. Woodpeckers seem to be attracted to houses with earth tones such as green, brown, dark red, orange, or gray. White and bright pastel-colored homes are much less likely to be attacked. Woodpeckers are also much more inclined to tap on a stained house than on one with a hard coating of paint on the wood. Insect infestation is probably far less likely to occur in painted siding.

In conclusion, if a woodpecker is hammering your house, you probably live in a heavily wooded neighborhood and have wooden siding, which may be infested with insects. You should be aware that federal law prohibits killing woodpeckers, no matter how much they annoy you. But numerous deterrents are available. To find the most effective solution, first evaluate the reason the birds are interested in your home. The accompanying sidebar outlines several methods for controlling woodpecker damage. For more information and photographs, visit our woodpecker website at <www.birds.cornell.edu/wp_about/index.html>. ■

Emily Germano is a research aide at the Cornell Laboratory of Ornithology. Sandra Vehrencamp is a Cornell University professor.

CONTROL METHODS

The best way to keep woodpeckers from hammering on your house is to begin damage control as soon as you hear the first tap. And you should continue these measures even after the woodpecker has left to ensure that it does not return. Any holes the bird has made in your house should be immediately repaired and painted to avoid attracting more woodpeckers.

General woodpecker deterrents

1. Tactile deterrents

Although some people recommend applying sticky repellents such as Tanglefoot Pest Control, Roost-No-More, and Bird Stop to areas where damage is occurring, we are against using them. These products can get on a bird's plumage, impairing its ability to fly and stay warm. Moreover, they can darken and stain wooden siding and cause dirt to adhere to the surface where they're applied.

2. Visual deterrents

- Aluminum foil strips or reflective tape hung from areas where damage occurs may scare away woodpeckers. The strips should be long enough to hang freely and blow in the breeze.
- Windsocks hung from house corners serve the same purpose as aluminum foil and may be less intrusive.
- Handheld windmills, especially those with reflective vanes, can be attached along areas of damage. The motion of the revolving vanes may discourage woodpeckers.

3. Sound deterrents

- With an electronic distress call system, a recording of a woodpecker distress call followed by the call of a predator such as a Sharp-shinned Hawk is broadcast through a speaker system at various intervals to frighten woodpeckers away from your house. One example is BirdGard, manufactured by Weitech.
- A movement detector that makes noise when it senses movement can be attached to damaged areas (this will also keep deer away from your garden).

4. Other preventative measures

- To prevent damage under eaves, lightweight nylon or plastic netting can be attached from the overhanging eaves to the siding of the damaged building. To keep the birds from reaching through the net, leave at least three inches between the net and the siding.
- Aluminum flashing can be used to cover existing holes or to line the corner or fascia boards of the house. You can paint it to match your siding.
- Setting up a suet feeder in your yard may draw the birds away from your house. Keep the feeder supplied with food throughout fall, winter, and spring when natural food is scarce and the birds are hungriest because of the cold weather. Remove the feeder during the hot summer months because the suet may become sticky and adhere to the bird's plumage.
- To dull the sound produced by drumming, place padding behind the area where the bird is drumming.

Nesting or roosting woodpecker problem

- As long as a nest is not already established, existing holes should be plugged with wood putty. If the birds already have eggs or young, the holes can be sealed after the nestlings have fledged, usually by midsummer. The preventive measures outlined under General Woodpecker Deterrents can then be followed to keep the woodpecker off your house.

Insect prevention

1. Carpenter bees

If there are long trenches and holes on the wood fascia boards of your house, chances are you've got carpenter bees, and the woodpeckers have discovered them. To discourage the woodpeckers, you must get rid of the bees.

- Carpenter bees prefer to drill into either natural or stained wood. If the wood is painted (oil base or polyurethane), there is less chance of infestation, because a hard finish deters bees.
- If you prefer natural or stained wood, spray the area with a preventive insect control such as Cypermethrin.
- If the bees are already established, consider using an insecticide specifically designed to control wasps and bees. It should be sprayed into the entrance holes in late evening or at night when the bees are inside the tunnels. After 24 hours, plug the tunnel entrances with a cork, wooden dowel, or wood putty to keep bees from recolonizing there.

2. Leafcutter bees and other insects

- If your house is sided with grooved plywood, painting it will often seal core gaps, preventing insects from tunneling into the wood. If you don't want to paint your house, caulking along the sides of the vertical grooves can cover entrances to gaps in the core. This is labor-intensive, but it is often the only way to get rid of the insects. Once the gaps are caulked, the damage should be repaired so old holes don't attract foraging woodpeckers.
- For houses sided with wooden shakes, shingles, or board and batten, the most effective remedy is probably to get an exterminator to spray the outside of your house with insecticide and then replace the damaged shakes or boards. If damage is continuous and extensive, an electronic distress call system may be effective.

Damage prevention for trees

Yellow-bellied Sapsuckers tend to drill for sap in certain ornamental trees, such as the mountain ash. To keep sapsuckers from damaging trees (boring rings of small holes around the bark of the trunk or limbs), wrap a burlap bag or other heavy material around the damaged area. Or you could allow the woodpeckers to use the damaged tree in the hope that they will not move to other trees. Keep in mind that sapsuckers tend to drill into trees that are already diseased or damaged.

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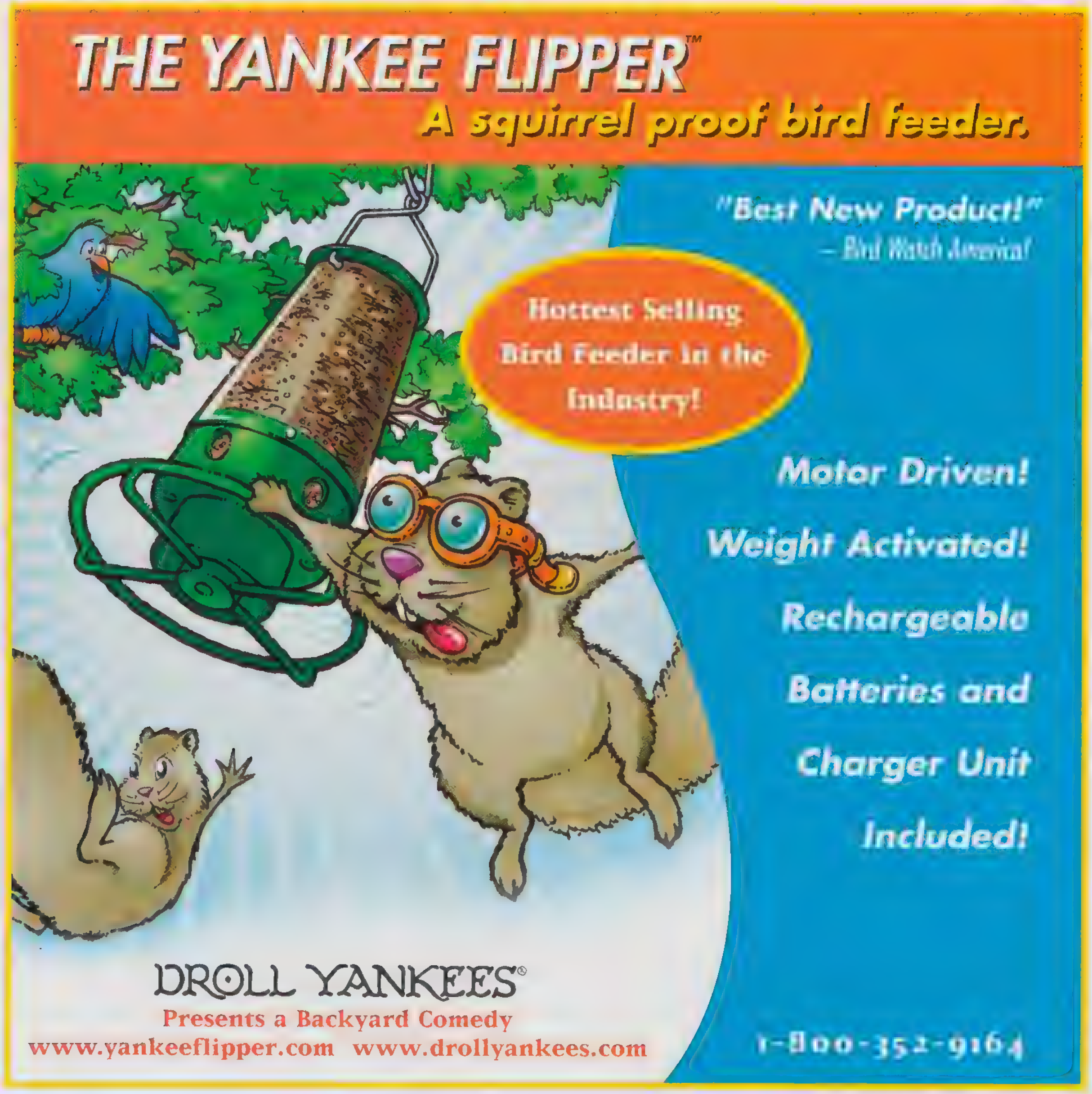

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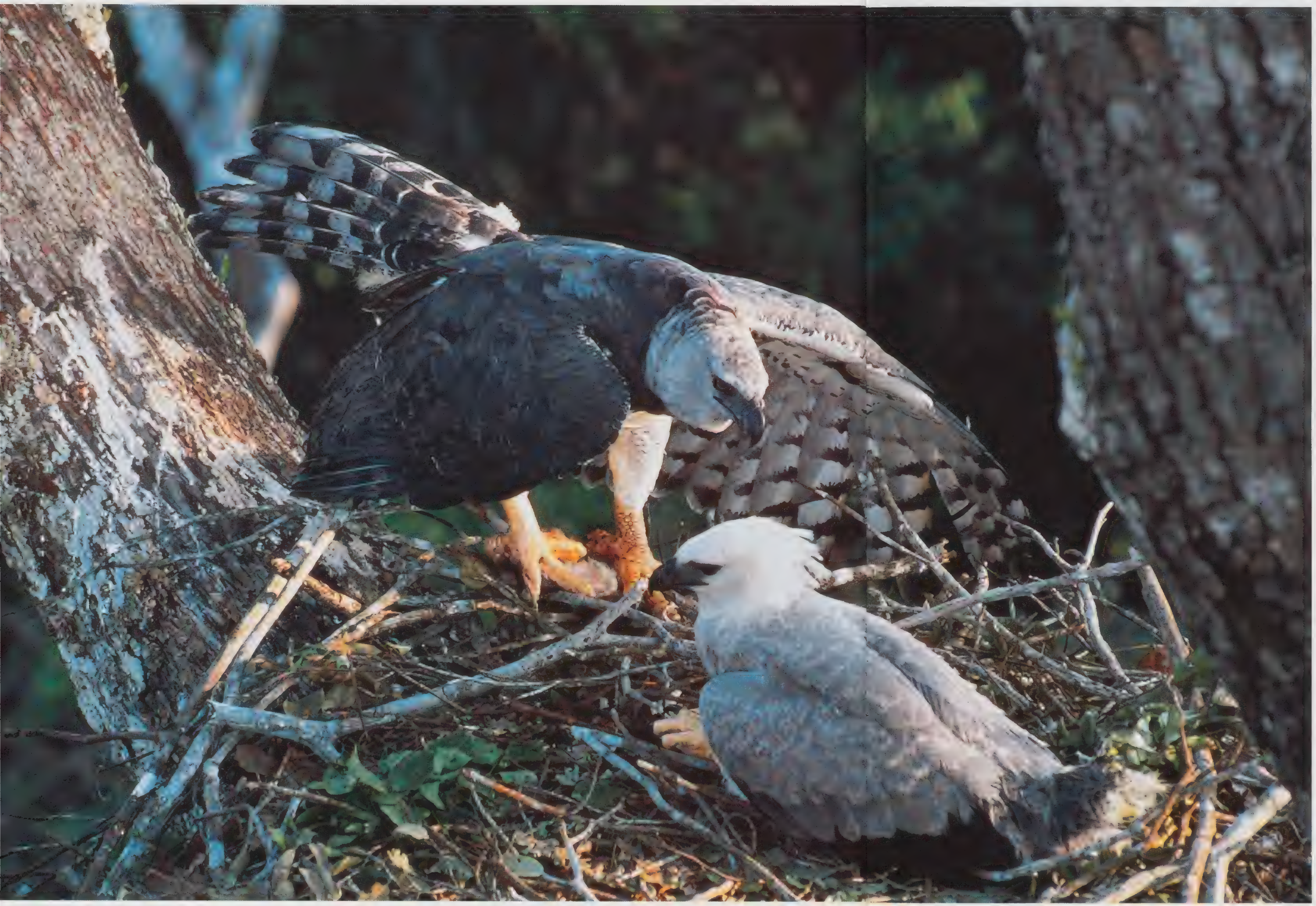

TUI DE ROY/MINDEN PICTURES

BY TUI DE ROY

Five weeks photographing eagles in the jungles of Peru

Approaching fast, the great eagle sails on two-meter wings, cutting a straight course between the dense boles of towering rainforest trees. I hold my breath as I watch her fly in at eye level, forgetting for an instant that I am perched high in a giant Brazil nut tree in a jungle in southeastern Peru.

Huge wings flailing, silent as a butterfly, boldly barred black-and-white undersides flashing, the female eagle braces herself for a landing, her hefty, nearly 20-pound frame deftly alighting on the edge of an enormous stick nest, only 26 feet away from me in the crotch of the same tree. She inspects me suspiciously with her piercing golden eyes for a moment, then turns her doting stare back to her nearly grown chick, frantically begging for food in front of her. Alone on the nest, the fully feathered, five-month-old eagle had looked enormous to me, but beside his mother, he is dwarfed.

Everything about the adult eagle denotes strength and power. Her deep-set, forward-facing eyes, her enormous hooked beak, her disklike facial feathers and tall crest, flared whenever a sound catches her attention, are

A female Harpy Eagle (left) brings fresh-killed prey to her nearly full-grown, five-month-old nestling.

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both regal and businesslike. Her stocky, wide-shouldered body is even more impressive. Her massive yellow legs, almost as thick as my wrists, are astounding. This is the armament of a successful canopy predator. Clutched in her massive talons—said to be as large as the claws of a grizzly bear—I can see a small tawny-furred object. Giving in to her chick's insistent cries and head-bobbing, she slowly releases the prey, which turns out to be a not-so-small, freshly killed three-toed sloth, a favorite food of the eagles.

I can't believe my luck. Only an hour into my first day's canopy vigil, straddling a branch 106 feet above the forest floor, I am seeing my first Harpy Eagle, a legendary bird I had dreamed of seeing since childhood. Named after the mysterious, rampaging creatures of Greek mythology, half woman and half bird, the Harpy Eagle is the mightiest raptor in the world, preying on arboreal mammals in the lowland forests of Central and South America. According to studies of this species in Guyana, at this stage in the nesting cycle the parents may go as much as a week or two without bringing food to their young. So when my partner, Mark Jones, and I set up our flimsy cloth blinds in the treetops, we expected a long wait. Little did we know that this female eagle would be such an exemplary mother, barely letting a day pass without providing for her chick. She often brought back prey within only a few hours of setting out to hunt.

Harpies are powerful hunters and can kill animals almost as heavy as themselves. Sometimes the parents have to feed on an animal for several days before it is light enough to carry to the nest.

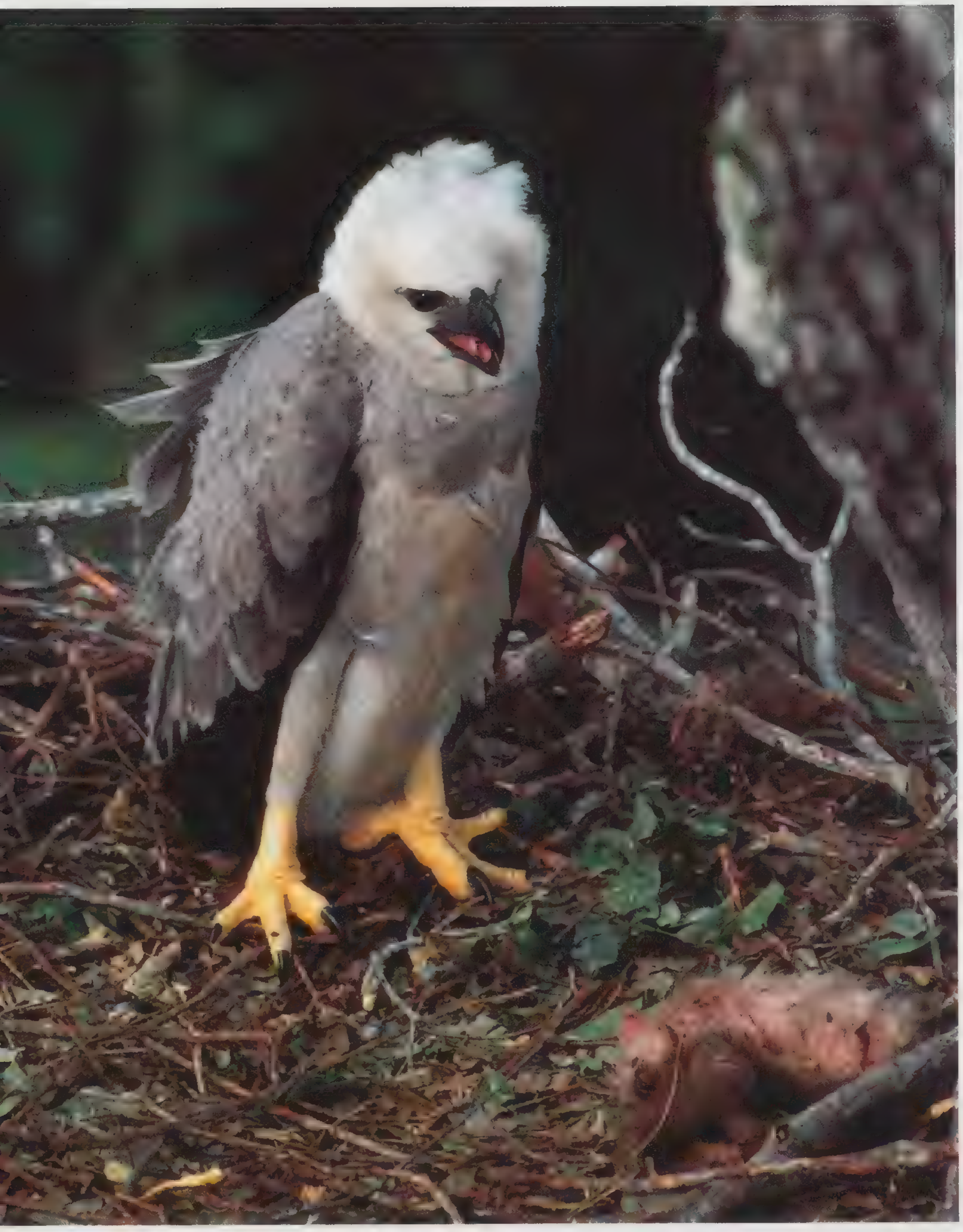
Despite its size and striking plumage, the Harpy Eagle is one of the least-known predators of the tropical rainforest, so secret are its ways. Though the birds are difficult to count accurately, the harpy is rare throughout its range and may be edging toward threatened or endangered status. One problem is that the eagles make attractive quarry for indigenous hunters in search of bush meat. And the bird's own prey species, ranging from large parrots to anteaters, monkeys, sloths, and even the occasional fawn snatched from the ground, are also relentlessly sought by hunters, significantly reducing the eagle's prey base in some areas. In addition, deforestation is shrinking its habitat at an alarming rate.

Compounding these sad facts is the slowness of the Harpy Eagle's reproductive cycle. It has one of the longest chick-rearing periods of any raptor—or, for that matter, any bird. The female lays two eggs, but usually only one hatches, after nearly two months, during which time she incubates the eggs and is fed by her significantly smaller mate. It takes six months for a young harpy to learn to fly well, and it will still receive food, mostly from its mother, for up to an additional year. This means it takes one pair of harpies two to three years to bring one eaglet from egg to independence. Although the reproduction rate may be sufficient to maintain the population in the absence of natural predators, it is painfully slow if they have to make up for birds killed by people.

All of these considerations seem very dis-

Author Tui De Roy rappels down from her blind in the eagle nest tree. She spent more than a month with the Harpy Eagles, photographing them daily at their nest (facing page).

LEFT: MARK JONES. RIGHT: TUI DE ROY/MINDEN PICTURES.



The young male eaglet (above) seemed huge to De Roy, until she saw its mother—a massive 20-pound Harpy Eagle. At right, the young eagle exercises its wings.

TUI DE ROY/MINDEN PICTURES (2)

tant as I sit in the eagle's nest tree, watching this healthy youngster tuck into a sloth dinner as his mother hops to the topmost branch to preen and survey her territory. Already the morning heralds a classic steamy Amazon day. The shrill sound of giant cicadas is reaching a crescendo. A flock of nervous, multicolored tanagers flits through the sunlit canopy foliage, while a pair of electric blue morpho butterflies, as big as bats, dances in the dim understory far below. Most noticeable of all jungle reminders, at least from my perspective, are the hundreds of wasps, ranging from tiny, agitated striped green types to sleek, glistening all-black giants, all taking turns at delivering painful stings whenever I carelessly try to brush them away as they try to consume my perspiration. Even the eagle is plagued by minute black bees, which dive into her eyes in search of body salts.

A breath of clammy air passing for a breeze rustles the Brazil nut's leathery leaves, carrying the incongruous sound of music, while human voices engaged in a lively discussion suddenly draw close. This is followed shortly by the harsh roar of a passing motorcycle, then another and another, barely eliciting an over-the-shoulder glance from the mother Harpy Eagle. A well-used jungle track cuts through the forest barely 50 yards from the nest, servicing the nearby native village of Infierno, on the banks of the Tambopata River, a fast-flowing tributary that eventually feeds into the great Amazon River.

How can this be? How can these harpies exist in such close proximity to humans, when they are becoming ever scarcer through human encroachment on their rainforest environment from southern Mexico to northern Argentina? The answers lie in the bold vision of a handful of Peruvians, ranging from university-educated conservationists to enlightened native leaders who have joined forces to ensure a better future for both Harpy Eagles and humans in this jungle enclave.

Several pairs of harpies nest at the core of a 25,000-acre land title held by a small community of native Ese'ejas, survivors from the nomadic peoples of this region who once numbered around 15,000. But colonization by Europeans was hard on the native people, many of whom were forced into slavery or decimated by diseases. A local man told me that the village name, Infierno (which means "hell" in Spanish), was coined by a priest who had likened the scene of a terrible local smallpox epidemic to hell on earth during that sad epoch.

Today the natives, along with a handful of mestizo settlers, have regrouped around a government school and medical dispensary, and for the past 20 years have operated successfully as a democratically run community numbering just under 400 members. Enjoying good health and a high degree of literacy, they live off subsistence farming and hunting wild game. Their economy hinges on forest products such as fibers for weaving and thatching, Brazil nuts for export, and lumber from trees cut and hand-milled as family operations.

But, as often happens when native cultures face modernization, better standards of living also brought the loss of traditional values and an accompanying sense of aimlessness that led to alcoholism and other social problems. And with guns replacing the bows and arrows of old, the dangers of overharvesting jungle species became a pressing issue. It was at this time that Eduardo Nycander, a young architect from Lima, Peru, fresh out of university, came onto

The adult female Harpy Eagle perches near her nest. These birds are massive, easily capable of catching sloths, anteaters, monkeys, and other large prey. At right, sunrise over the picturesque Tambopata River, not far from the eagle nest.

the scene armed with a conservation dream.

Together with partner Kurt Holle, another young graduate from Lima, Eduardo formed a small tour company named Rainforest Expeditions in 1992, with the goal of attracting ecotourism dollars to support research and protection of the beleaguered macaws of the upper Tambopata River. With the establishment of the Tambopata Research Center in an uninhabited region upriver of the village of Infierno, each year they attracted several dozen high-paying visitors in search of a rich wildlife adventure. At the same time, they made it a policy to involve the local people by hiring native boat drivers, guides, and field assistants. "We firmly believe that legitimate conservation efforts must integrate the local people," says Eduardo.

One of the villagers working with Eduardo and Kurt is Juan Pesha, a soft-spoken Native American who has since been elected president of the Ese'eja Native Community. Another is Sixto Duri, a keen jungle tracker with an encyclopedic knowledge of rainforest animals. When these two men and several other community members employed by Rainforest Expeditions saw the wonderment with which foreigners viewed everyday scenes of Amazonian wildlife, they realized that here lay the path to a better future for them. At a monthly meeting in their communal hall, the community decided to invite Eduardo to create an ecotourism plan in conjunction with the village.

Thus the Ke'eway Association—meaning Harpy Eagle in the native tongue—was born. The Ese'eja Native Community signed a 20-year contract with Rainforest Expeditions, arranging a 60/40 division of profits, while the native leaders drew up new bylaws, providing total protection to such apex species as Harpy Eagles, macaws, giant otters, and jaguars, and setting aside approximately 1,500 acres (seven percent of the community territory) to ensure a safe future for its natural ecotourism resources.

Meanwhile, Sixto and other sharp-eyed locals set out to survey the most outstanding species thought to exist on Ese'eja lands. This is how three Harpy Eagle nests were found in close proximity to human habitations. Sixto's patient stalking and keen observations even led him to find one nest less than two miles from the village—the very one I am watching.

As the days passed, the mother Harpy Eagle seemed to accept my presence in her tree completely, though one evening while I was climbing down from the tree, she decided to teach me a lesson. In perfect silence, she parachuted vertically from her perch, threading down between the branches, and shot past like a cannon ball, just inches from my head. All I felt was a great whoosh of wind that sent me spinning like a dangling spider on my rope. I had read about researchers wearing bulletproof vests to protect them from harpy attacks, but I had felt so at ease with this eagle that I no longer even bothered to wear my miner's helmet. When I looked up, trembling, she was back on her branch, watching me absently, as composed as ever.

This opened my eyes to the stealth and precision of her hunting techniques. Hour after hour, I watched her sitting stock still in the crowns of trees a few hundred yards away, watching and listening until something caught her attention. Then she would plunge through the canopy, disappearing with incredible maneuverability, ready to tear some unsuspecting prey from its branch with those formidable talons. Again and again, she brought back tree porcupines, anteaters, sloths, with as much ease as if she'd only gone out to the supermarket for groceries—a living testimony to the rich habitat and wildlife the people of Infierno have managed to preserve.

The Ese'eja Native Community and its eagles are just two hours away by boat up the Tambopata River from the busy jungle town of Puerto Maldonado, which has a population of 25,000 and is serviced by daily flights from Lima. Most mornings, the Boeing 737 would skim low over the treetops where the eagle and I sat, as it flew from the airstrip only 12 miles away. I had to laugh each time the plane roared overhead and my proud young eagle would drop his wings to cover the prey remains in his nest, exactly as he did whenever a thieving vulture swooped past.

On one sweltering September day, after five weeks in the jungle, I found myself on this same flight, sad to leave Juan, Sixto, Eduardo, and the eagles. As I stared wistfully out the window at the snaking river and the green sea of trees stretching to the horizon, I knew that somewhere below an eaglet was mantling his prey protectively. For this Harpy Eagle and the habitat on which it relies, a jet airplane is no more of a threat than a passing vulture, thanks to the dreams and schemes of a few enlightened people. ■

Tui De Roy is a freelance writer and photographer based in New Zealand. She and partner Mark Jones of Roving Tortoise Photography travel the world photographing natural habitats and wildlife. Visit their web site at <www.agpix.com/rovingtortoise>.

TUI DE ROY/MINDEN PICTURES (2)

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SALTMARSH SHARP-TAILED SPARROW BY TOM VEZO

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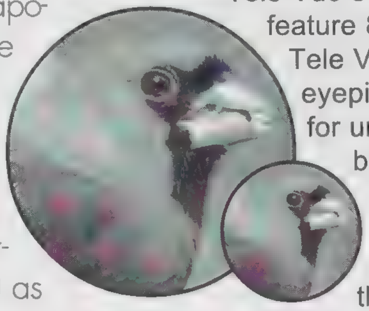

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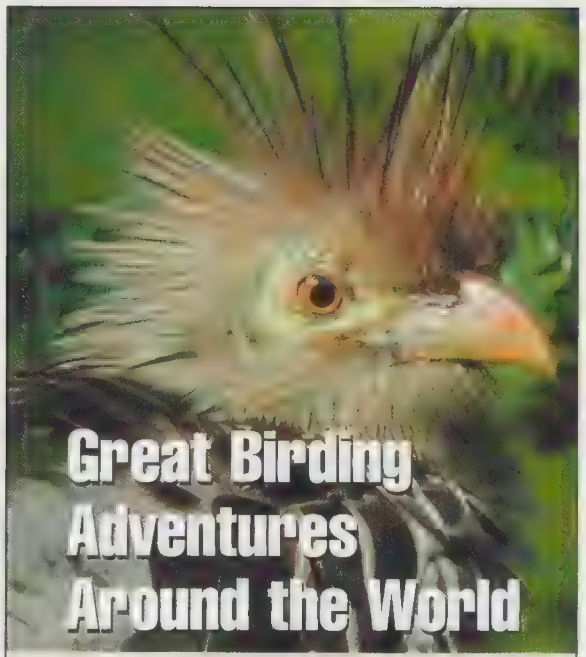

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CACHE AND CARRY

by Jack Connor

Could acorns exist without jays?

Two willow oaks stand in the far corner of our backyard, in a scrubby, sunny patch between an old white pine and three red cedars that mark our property's end. Both oaks are young—14 or 15 years old perhaps—and almost certainly were planted on the same day by the same individual within a few moments of one another. We didn't live here then and didn't plant them, but we know who did.

My wife first noticed the two oaks nine or ten years ago, when they were pencil-thin saplings, waist-high and two feet apart, and looked like twins. Today, the shorter is 10 feet tall and as thick as a baseball bat; the taller has grown to nearly 15 feet, with a trunk I need two hands to circle. We suspect the lesser twin would be doing better if its sibling were not shading it out, and Jesse has been talking about digging it up and moving it to a better spot, elsewhere in the yard. I am opposed. Separating them would remove one of the key clues to the story they tell.

Last spring I resolved to find the parent tree, or at least a tree I could call the most likely parent—the willow oak nearest our yard. Willow oaks have eye-catching leaves, laurel-like and tipped with a single bristle, that make the species one of the easier oaks to identify, even for botanically challenged observers like me. The parent would have to be a tall and substantial tree by now, I reasoned, at least 30 years old and probably more, because it was old enough to have acorns 14 or 15 years ago. I figured I would spot it in a few days of walking the dog around the neighborhood.

I learned a lot of tree identification this summer and scanned so many backyards with my binoculars that I invented a lie in case any neighbor reported me for weird and suspicious behavior: "Oh, it's nothing, officer," I planned to say, "I'm just looking for birds." But I have found no other willow oaks in the area.

Jesse found the closest one we've discovered. A magnificent tree with a spreading crown stands along a stream on our road but nearly five miles from our house—too far away to be parent to our backyard pair. Kevin Tarvin and Glen Woolfenden report in their 1999 life history of the Blue Jay for the *Birds of North America* series that the maximum documented distance of acorn transport is 4.0 km, "although 1-2 km [is] probably typical." Four kilometers is only half the distance to Jesse's tree, and even that distance surprises me. Blue Jays are not elegant, swift flyers in any circumstances. With acorns aboard, their flight grows more labored still. Their tails drop below horizontal, their wings flap faster, and they land regularly—sometimes flying less than 100 yards from one tree to the next—as if desperate for rest.

To understand the physiological challenge they face, you might pop three or four acorns into your mouth, hold another in your teeth, and run around the block. If the warm-up lap doesn't get your heart racing, spit out the acorns and replace them with coconuts—for a more proportionate sense of the jay's burden.

Nevertheless, Blue Jays carry acorns across the sky every October everywhere oaks grow in eastern North America. Some years—"mast years" for the oaks, presumably—you can see dozens of jays each day with acorns in their bills. Look close and you will notice their throats are distended. Tarvin and Woolfenden explain that they regularly carry four or five acorns at once, keeping two or three in the throat, one in the mouth, and one in the bill. They are famously diligent also. Radio-tracking work by Curtis Adkisson and others has found that individual jays cache as many as 5,000 acorns in a single season. In one study Adkisson and W. C. Johnson recorded 50 jays caching 150,000 acorns in four weeks—an average of 110 acorns a day. Johnson and another colleague, T. Webb, argued in a 1989 article in the *Journal of Biogeography* that air transport by jays must have been a primary reason for the swift range extensions of oaks and beeches northward up the continent as the ice retreated from North America following the most recent Ice Age. Because their seeds were so often carried to the leading edges of the forests—where jays prefer to cache—oaks and beeches moved north much faster than they could possibly have done without avian assistance.

In his informative and richly-illustrated book, *The Life of an Oak* (1998), botanist Glenn Keator ratchets up that argument another notch. He suggests that oaks are entirely dependent on jays for their reproductive survival and provides a map of their overlapping worldwide distributions as evidence for the point. Oaks reach their greatest diversity in the two areas where jays are also most diverse (Mexico and Southeast Asia) and are absent from all areas of the globe unoccupied by jays. Jays can live in areas where oaks do not—throughout most of subarctic Canada and southern Alaska, for example, where Steller's Jays, Gray Jays, and Clark's Nutcrackers eat pine seeds, among other items—but oaks apparently cannot live where jays do not. Their reproduction apparently depends on the aerial transport only jays provide. Where jays are absent—Australia, India, sub-Saharan Africa, and southern South America, for example—so are oaks.

The cooperative relationship between acorns and jays seems more complicated than the more obviously symbiotic relationship between fruit trees and fruit-eating birds, but the basic principle is the same. In both cases the plants benefit by having their seeds dispersed (out from the shadow of the parent plant), and in both cases the plants reward the birds for their transport by supplying them with food. The sweet flesh around the seeds of cherries, hollies, and other fruit-bearing trees is obviously designed as a reward for robins, waxwings, thrashers, and other birds. The seeds are so small that the bird swallows them incidentally and probably unconsciously. The robin flies off, digests the meal, and defecates the seeds, unharmed, far from the parent tree. Acorns are not so simply designed or as easily consumed. In fact, jays destroy the seeds they eat; oak seeds cannot survive digestion as fruit seeds do.

Look beneath any mature oak tree in October or November, and you will see why the tree needs the jays. Hundreds of acorns lie together in rotting mats under most oaks; by December almost all these acorns will be infested by weevils and other insects. The few that somehow survive the parasites are usually doomed by their placement. The parent's shade condemns the offspring to death by malnourishment—they cannot get enough sunlight to photosynthesize and grow. Each oak produces thousands of acorns each fall, but the odds of any individual acorn surviving to grow tall enough to flower and have acorns of its own are extremely low. If a jay arrives to pluck the acorn from the tree and fly it away, however, its chances rise significantly.

The key is the jay's burying instinct, a secretive behavior much harder to observe than acorn transport. I finally witnessed it for the first time only a couple of years ago—and by sheer accident. I was leaning against a pine tree on the edge of Nacote Creek, the brackish river that runs through our town, watching some gulls, when a jay called from another pine only 50 yards away. He had an acorn in his bill, and before I could wonder why (or how) he would call, he dropped to the ground, an open meadow of grasses, right in front of me. My view was blocked somewhat by the grasses, and my notes from that day indicate I did not fully understand what I could see: "Had an acorn in bill and seemed to make a probing or burying motion, pressing head down, then lifted head up w/o acorn . . . Hopped a couple of steps and faced other way. Next returned to the original spot and then did he pluck it up again? To move it to a better spot? Did he cough up another from his throat? Seemed to repeat this sequence of

MARIE READ

The oak's reproductive strategy depends on oversupplying the jay. If the jay forgets the cache during the winter or finds other food, the acorn may survive to become a tree itself.

A lot of great birders have raised glasses in this event

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motions 2-3 times. . . . [Perhaps he] couldn't decide where to bury it? Was he trying different spots? I need to go back and watch some more—with scope, if possible. Tried to find where he'd buried them afterwards, but no luck: mix of grasses, sticks, and little white stones made good camouflage."

That scopeless moment remains my only sighting of a caching jay in action, and it was only after I consulted Tarvin and Woolfenden's *Birds of North America* essay that I realized what I had observed. Jays prefer to cache in "relatively open patches near denser vegetation, especially in burned, plowed, or mowed areas," they report. They describe a bird carrying multiple acorns in its mouth and bill and landing on the ground: "Upon arrival at cache site, places all acorns in a pile, then buries them singly within a radius of 1-3 [meters]. Usually covers cache with dead leaf or pebble."

The Blue Jay on the creek returned to his pile of acorns three or four times, I realize now, burying and covering each acorn separately. Unlike Acorn Woodpeckers, which cache in tree trunks far above the ground, and squirrels, which bury acorns too deeply, jays bury their oak seeds at just the right depth and in just the right circumstances for the acorns to grow into trees. The oak's reproductive strategy depends on oversupplying the jay. If the jay forgets the cache during the winter or finds other food, the acorn may survive to become a tree itself.

And that must be how the two willow oaks—two uncommon trees less than a meter apart, hundreds of yards, if not miles, from the next nearest member of their species—came to occupy our backyard. One autumn day in the late 1980s a Blue Jay landed in an open patch of suburban grasses and buried several acorns. Perhaps he (or she) returned to eat two or three of them, but at least two others survived. They grow taller and thicker each year. When the summer day comes when the first of them flowers itself and produces its first acorns, I plan to gather a few members of the family together for a toast in that Blue Jay's memory: "Thank you, my friend, for bringing us those trees." ■

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The Catbird Seat

LOOKING FOR MR. GOOD BIRDER

by Pete Dunne

"Oh, you know [name withheld]," my birding acquaintance assured me. "He found the [species withheld]. He leads field trips for [name of organization withheld]."

There was a brief pause while I digested this scant information and found myself still one key element short (that being the name of the individual being discussed)—time enough for my birding accomplice to add with a sage nod of the head: "Good birder."

And maybe it was because I didn't know Name Withheld, or maybe because I'm just a contemplative kind of guy, but I found myself wondering just what constitutes a good birder.

I *think* I understand what other people mean when they label someone a good birder. They mean that he or she is skilled at identifying birds, careful with regard to discovering and reporting unusual species, and all in all a good role model for those who aspire to the label, good birder.

But is that all there is to being a good birder? Are skill, caution, and communication the only characteristics?

What about character? What about ethics? If Mr. or Ms. Good Birder parks in front of a locked gate and jumps two fences plastered with "No Trespassing" signs to get to the bird, does he or she still qualify as a good birder?

I recall talking with an Alaskan bush pilot about hunting outfitters. I asked whether he could recommend a "good sheep guide." After a pause, the pilot asked for a clarification.

"Good as in high client success ratio or good as in ethical?"

"Good as in ethical," I said.

"It's good you said that," he replied, "or this conversation would be over."

Should good bird guides be any less good than good hunting guides? Or does getting the bird constitute pragmatic absolution, providing that no real harm is done?

Why doesn't the good in good birder relate to the lengths to which a birder will go out of his or her way to help less experienced birders? I've seen scores of "good birders" march right past other birders standing in front of waterfowl-packed lakes (their field guides open, looks of consternation on their faces) and never so much as mutter "They're coots," much less stop and say, "Can I help you with an identification?"

Or is it right to label a person a good birder when he or she doesn't seem to care about the safety or welfare of birds or support conservation organizations whose mission is to protect birds and their habitats? I've known "good birders" who have railed against being denied access to rare species when sanctuary managers concluded that the well-being of the birds comes ahead of the interests of birders. Shouldn't a good birder put the welfare of birds first?

I find it difficult to disassociate my interest in birds from my concern for birds, but I know that not all birders see this connection. As one birder and field-trip leader of my acquaintance put it, "I'm not a conservationist. I'm a birder."

Okay, I see your point. You are a birder, and you're serving the birding community by helping to define the difference between being just a birder and being a . . . good birder!

Why doesn't the good in good birder relate to trying to broaden the awareness of nonbirders to the world of birds? I recall the day I met a gentleman named Louis Banker. He was a serious birder, with a North American life list that required oxygen gear and a pressurized suit to perceive and admire.

The day I met Louis he was plopped, Buddha fashion, on the banks of Mrazek Pond in Everglades National Park. In front of him were several average tourist types. In his hand was a field guide, and he was patiently and enthusiastically linking the herons and egrets in the pond with their likeness in the book.

Louis Banker—a good birder, no matter how you define the word, which brings us back to the semantic impasse that kicked off this essay.

"What do you mean?" I said to my birding acquaintance.

"What do I mean by what?" he said, clearly perplexed.

What do you mean by 'good birder?'" I replied.

My birding acquaintance looked at me curiously, then brought his binoculars up to study something that turned out to be nothing. He looked at me again and said, "Aw, you know."

Maybe I do at that. ■

ILLUSTRATION BY JEFF SIPPLE

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LIVING BIRD

SPRING 2003 VOLUME 22 NUMBER 2

GREETINGS FROM SAPSUCKER WOODS

As I write this column, we're nearing the end (I hope) of the winter that wouldn't quit in Ithaca, New York. Although it's mid-March, much of the November snow is still on the ground and Sapsucker Woods pond is covered with a thick sheet of ice. But the balmy temperatures yesterday convinced me that the trees outside my office will soon be green.

The biggest news at Sapsucker Woods is that we're all back home under one big roof in our brand-new building. Moving in has been quite a feat in itself. Crate after crate of furniture, computers, books, and assorted equipment were brought to the building and carefully set in their places. By the time we finished unpacking, the halls were piled high with empty boxes. And we still have thousands of bird, mammal, fish, snake, and other vertebrate specimens, some preserved in alcohol-filled glass containers, yet to be moved.

Of course, moving in is only one small phase in a process begun about five years ago, at the start of the fundraising effort to create the new building. Most of us are still amazed that the project is over and the building is open.

We are also grateful. Without the unceasing support of our members and friends, this great new facility could never have been built. If you are traveling through Upstate New York this summer, please stop by and visit. Otherwise, wait for our Autumn 2003 issue, which will feature photographs of the building (without snow) and articles about the work being done inside.

Tim Gallagher
Editor-in-Chief

Cover: Photographer Cliff Beittel captured all the subtle beauty of this Killdeer one spring morning at North Dakota's Lostwood National Wildlife Refuge, one of his favorite places to take pictures. "On this morning," says Beittel, "the Killdeer gave me a wonderful wing stretch just as the sun rose over a hill to the northeast, above which Sprague's Pipits were singing."

Right: A brief encounter with a Black Skimmer is what originally inspired renowned photographer Arthur Morris to start watching birds. See article on page 10.

Back Cover: A Cliff Swallow gathers mud to build its nest, set high on the nearby cliffs above the Great Falls of the Missouri River. The females often flutter their wings as they gather mud as a possible defense against extra-pair copulation attempts. Photograph by Cliff Beittel.

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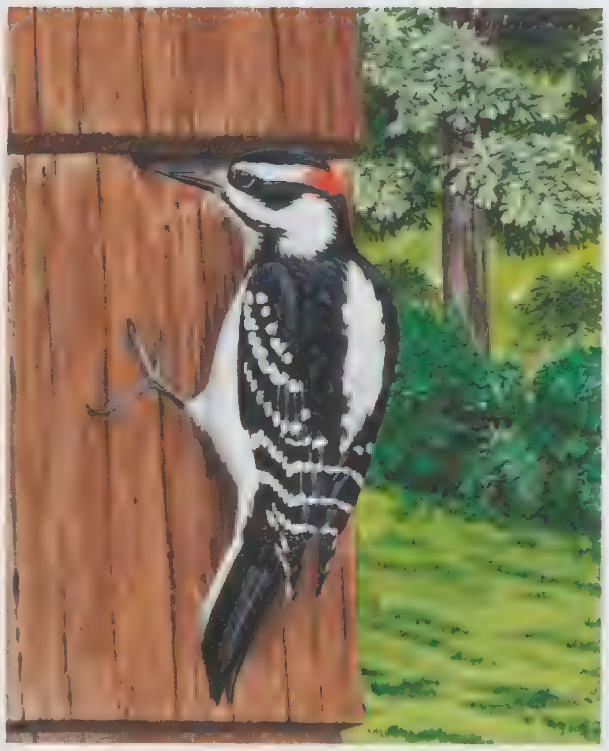
Letters



JOHN SCHMITT

A HAIRY DILEMMA

I just received the Winter 2003 issue of *Living Bird* and am enjoying it. However, I must point out an identification error in the illustration on page 24 of the article "Hammerheads." The painting by John Schmitt shows what I believe is a Hairy Woodpecker, not a Downy Woodpecker as stated. The bird shows the relatively long bill of a Hairy Woodpecker and lacks the black spots generally present on the outer tail feathers of the Downy Woodpecker. Otherwise, this is another excellent issue. I especially liked Pete Dunne's article "Looking for Mr. Good Birder." Keep up the good work.

Rick Sussman
Ashton, Maryland

Thank you for your note. This kind of thing is a bird magazine editor's constant dread, usually brought about by a lengthy chain of small events that add up to an embarrassing slip. In this case, a miscommunication between editor and artist, a caption written without seeing the illustration, a late-arriving painting sent directly to the printer, and a rushed proofing day allowed a glaring error to slip past. We're glad you enjoyed the issue.

The Editors

WOODPECKER WOES

I have lived in a green stained, cedar board-and-batten house in a densely wooded area since 1969, so I found the article on homeowners and woodpeckers most interesting. There have been seven species of woodpeckers in my woods over the years: a brief visit from a Pileated Woodpecker once, nesting Red-headed Woodpeckers when we first moved here, and now, resident Downy, Hairy, and Red-bellied woodpeckers, migration visits from Yellow-bellied Sapsuckers, and summering Northern Flickers. So far, I've only had a brief experience with flickers drumming on the downspouts in spring (thought it was neat!) and occasionally a downy will peck around a bit while foraging for spiders and bugs in the webs on the house. I was pleased to see that you suggested putting up a suet feeder as a preventative measure—I have six of them, even in summer (the birds eat the suet so quickly it does not go bad)—but I would like to suggest one other measure you did not mention. Leave dead and rotting trees standing in the wooded area. This gives the woodpeckers plenty of natural places to put their nest and roost holes, and to forage for the insects that attack dying trees. I have not removed any dying trees unless they would endanger the house if they should fall. I have lots of woodpeckers, lots of dead trees in the woods, plenty of suet out, and no damage to my house.

Bettie Harriman
Oshkosh, Wisconsin

We welcome letters from readers. Write to The Editors, *Living Bird*, 159 Sapsucker Woods Road, Ithaca, New York 14850, or send email to <livingbird@cornell.edu>.

BirdNews

In Memoriam

Dean Amadon

(1912–2003)

The world of ornithology lost one of its stellar figures when Dean Amadon passed away this January at his home in New Jersey. He was 90 years of age.

Born in Milwaukee, Wisconsin, in 1912, Amadon graduated Phi Beta Kappa from Hobart College in 1934. He then attended Cornell University as a graduate student, studying ornithology with Lab founder Arthur A. Allen.

Except for his military service in World War II, Amadon spent his entire career at the American Museum of Natural History in New York City. He first went to work there in 1937, cataloging bird eggs, while he was still a Cornell student. He served overseas with the Army Medical Corps in the Pacific, but he didn't let the war get in the way of his bird studies. He conducted extensive ornithological research in Hawaii and the Philippines. He wrote his doctoral thesis on Hawaiian honeycreepers and received a doctorate from Cornell in 1947.

Amadon later became a world-renowned authority on birds of prey and co-wrote, with Leslie Brown, the acclaimed two-volume work, *Eagles, Hawks, and Falcons of the World*—the definitive treatment of the systematics, behavior, and natural history of diurnal raptors. He was the author or co-author of scores of publications.

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Dean Amadon

Amadon was appointed Lamont Curator at the American Museum of Natural History in 1955 and became chairman of the Ornithology Department in 1957. He held both posts until his retirement in 1973, but he remained active at the Museum (and in the world of ornithology) for the rest of his life. He served as president of the American Ornithologists' Union in the mid-1960s. He was also a past president of the Linnaean Society of New York and the John Burroughs Memorial Association. He was a fellow of the American Association for the Advancement of Science. Amadon was an influential member of the Cornell Lab of Ornithology's board during the Lab's formative years.

Dean Amadon is survived by his wife, Octavia Gardella Amadon; two daughters, Susan A. Wilt and Emily A. Bengelsdorf; and two grandchildren.

DEATH OF A CONDOR

The death of a California Condor is always a tragedy. The species is one of the rarest on earth, almost wholly dependent on a captive breeding and reintroduction program for its existence. Still, the death of AC-8 (Adult Condor 8) caused shock and dismay to most people who admire the California Condor.

AC-8 was born in the wild, probably in the 1960s or '70s—no one knew her exact age. She was one of only a half-dozen California Condors remaining in the wild in 1986 when researchers decided to trap them all to use in a captive-breeding project, in a desperate bid to stave off the species' extinction.

She spent 14 years in captivity at the San Diego Wild Animal Park and became a matriarch of the captive flock, producing nine young condors. In the spring of 2000, researchers decided to release her. She had become less productive as a breeder, and they thought she could act as a mentor for other released condors. And so, AC-8 returned to the wild—the only free-flying California Condor with a living memory of the foraging techniques and other behaviors the birds had practiced for millennia before 1987.

AC-8 was found dead on February 13, 2003, in a remote area of southern Kern County, California. A necropsy revealed that she had been shot.

A coalition of conservation groups is offering a reward of more than $30,000 for information leading to the arrest and conviction of the person or persons who killed AC-8. Anyone with information should call the U.S. Fish and Wildlife Service's Office of Law Enforcement at (916) 414-6664 or the California Department of Fish and Game's CalTip program at (888) DFG-CALTIP.

Spotlight

CLOSE ENCOUNTERS

by David S. Wilcove

With the Kagus in New Caledonia

"What brings you to New Caledonia?" asked the storekeeper, as I handed him my purchases—a wood carving of a Kagu, four Kagu postcards, and a Kagu keychain. "I'm looking for the Kagu," I replied. His eyes narrowed with suspicion. "No one comes just for the Kagu," he growled.

Granted, New Caledonia's topless beaches and coral reefs attract far more tourists than do its birds, but for some of us at least, the Kagu is reason enough to visit this remote corner of the South Pacific.

Originally classified as a heron on the basis of its plumage, the Kagu was subsequently transferred to that grab bag of ornithology, the Gruiformes, a grouping consisting of cranes, rails, trumpeters, sungrebes, and other avian odds and ends. Within the Gruiformes, it occupies its very own family, the Rhynochetidae. Standing about two feet tall, the adult Kagu is pearly gray in color with a long, flamboyant crest that it normally keeps folded neatly over its neck and upper back. Its feet and bill are fluorescent orange, adding a garish touch to its otherwise plain plumage. The Kagu's large, wine-red eyes are well suited to spotting beetles, millipedes, snails, worms, and other prey crawling among the leaves on the dark forest floor. Although Kagus possess large, broad wings, they lack the musculature necessary to fly. Hence, they use their wings primarily to assist them in climbing steep hills or for displaying to other Kagus.

Pairs appear to stay together for many years—perhaps for life—and defend a territory of 12 to 75 acres. Yet apart from the breeding season, the male and female spend relatively little time together, preferring to be alone. They raise one chick each year, and offspring from previous years remain on their parents' territory for up to six years. Consequently, a typical Kagu territory contains a breeding pair and their offspring in various stages of adolescence.

In its pristine state, New Caledonia contained no large, ground-dwelling predators, so being big and flightless posed few problems for the Kagus. True, the indigenous Kanak people snared and ate Kagus from time to time, but presumably not to a degree that seriously threatened their survival. With the arrival of European settlers and the subsequent growth of the island's human population, however, activities such as farming and logging began to take their toll on the forests. The discovery of rich mineral deposits, especially nickel, further accelerated deforestation, as miners stripped away the forest in search of ore. Today, only about 20 percent of New Caledonia's forests remain. This change alone would have sufficed to place the Kagu (and other birds) in jeopardy, but it was compounded by another more insidious threat: the spread of alien species. Cats, rats, and pigs have undoubtedly caused some harm to Kagus, perhaps by killing chicks and eggs, but there is little evidence that these animals by themselves pose a grave threat to the birds. The Kagu's worst enemy turns out to be man's best friend.

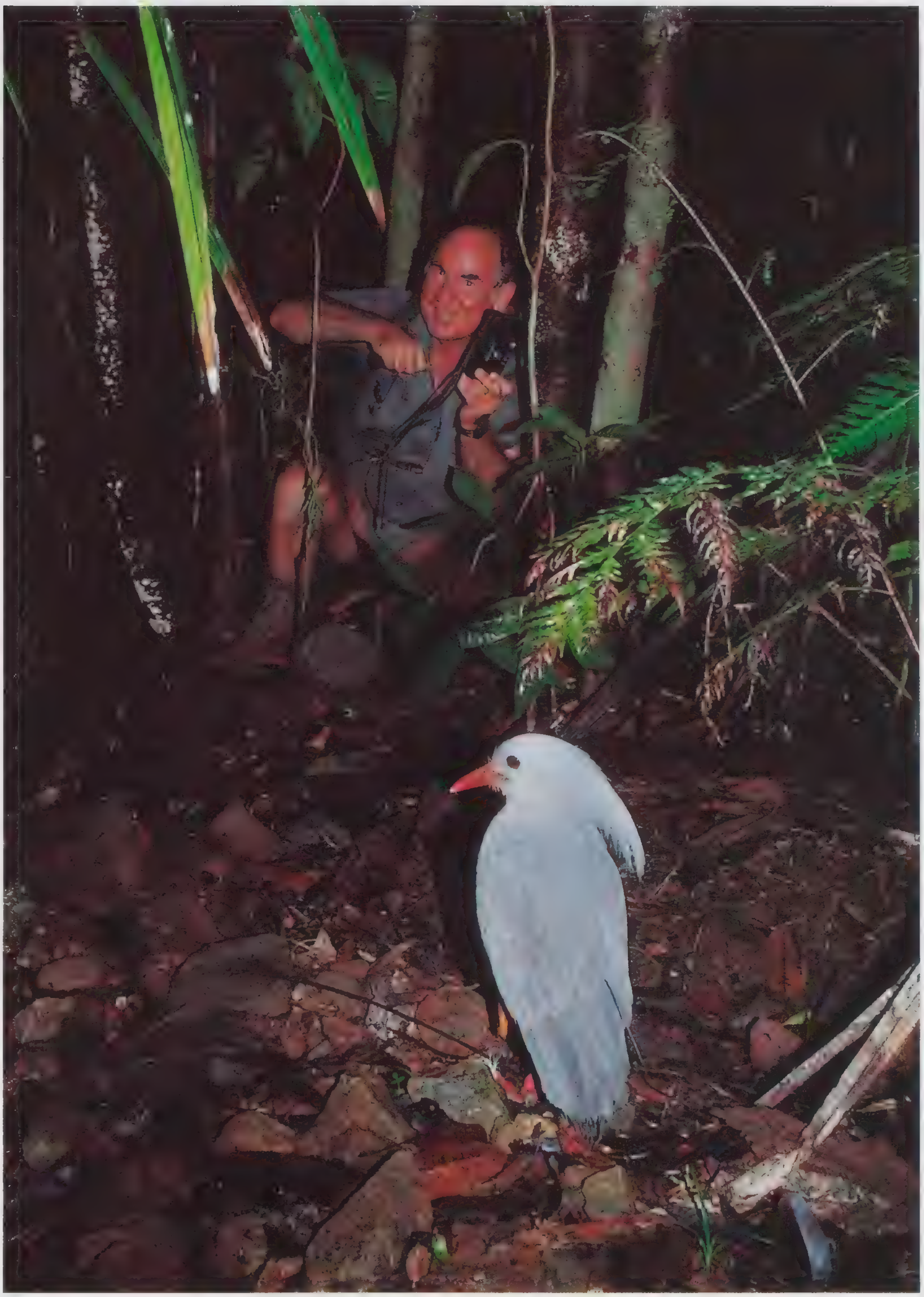
When Captain Cook "discovered" New Caledonia in 1774, he left behind a pair of dogs. The descendents of these two animals, plus innumerable other mutts and purebreds brought over since that time, have made life

DON ROBERSON (2)

Some of the Kagus in the study area wear small radio-transmitters. Above, Letocart uses a receiver and a directional antenna to track down a radio-tagged Kagu.

miserable for the Kagus. For nearly two centuries thereafter, people used dogs to sniff out and capture Kagus, a practice that finally ended when the bird was declared a protected species. The dogs, however, never lost their taste for Kagu-hunting, and they continue to devastate Kagu populations adjacent to settlements or even inside protected areas. Recent studies have shown that dog predation is currently the greatest threat to Kagus.

Enter an avuncular hero by the name of Yves Letocart. Born and raised in New Caledonia, Letocart was hired by the Forestry Department and stationed near the Riviere Bleue Park. He decided to study the park's dwindling Kagu population, estimated at fewer than 60 birds in 1980. Letocart quickly concluded that a predator control program, focused on dogs, was needed. Hundreds of feral dogs and cats were subsequently removed from the park, and the Kagu population soared. Today, Letocart estimates that more than 500 Kagus live in Riviere Bleue, making it by far the largest remaining population of the birds.



Born and raised in New Caledonia, Yves Letocart (above) has been studying a small population of Kagus at Riviere Bleue National Park for several years.

When we visited New Caledonia last summer, scientists from the World Wildlife Fund office in New Caledonia kindly arranged for us to join Letocart in the field. Leaving the capital city of Noumea in the predawn darkness, we traveled through miles and miles of cutover, scarred land before arriving at the entrance to Riviere Bleue. We were greeted by a small contingent, including Letocart, his Forestry Department colleague Jean Marc Meriot, and a camera crew from the capital city of Noumea, curious to find out why a contingent of scientists would travel all the way from the United States just to look for a bird.

After a morning spent searching for some of New Caledonia's other fine birds, Letocart offered to take us to his study site in a section of the park normally closed to visitors. Here lived a pair of Kagus he has been studying for the past 15 years. Finding the birds would not be a problem—the male was radio-collared. With the aid of a receiver, Meriot quickly located the radio signal, which he traced to a tall, densely forested hill. As we slowly began our climb up the hill, I began to wonder how the birds would respond to the presence of so many strangers in their territory. Would they be alarmed, reclusive, agitated? I needn't have worried. Before we were halfway up the hill, we saw two gray forms running through the forest toward us. These Kagus seemed not the least bit disturbed by our presence. At the risk of sounding anthropomorphic, I had the distinct impression that they actually welcomed our visit,

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much the way a rural couple might welcome old friends visiting from the city. Soon we were walking together through the forest—Kagus, Kagu-protectors, and adoring fans. Meriot scraped away the fallen leaves from a patch of soil, exposing a few earthworms and insects. The Kagus raced over and gobbled up the prey, and soon all of us were creating little scrapes for the dining pleasure of our distinguished companions.

"Keep showing them food," Letocart advised. "If they find enough food, they'll want to feed their chick, and they'll lead us to it." We spent the next 40 minutes or so working our way up the mountain, exposing patches of soil for the Kagus, watching closely for any sign of the chick. Eventually, Letocart announced he had found the youngster—a ball of camouflaged fluff, approximately the size of a peach, huddled next to a sapling. I anxiously looked around for the parents, certain they would be alarmed by a gaggle of ornithologists and reporters so close to their offspring. Yet neither parent uttered an alarm call, raised its crest, or showed any sign of anxiety—indeed, I was far more nervous than they were. The parents continued to search for food, utterly unperturbed by our presence. I moved away from the chick, squatted down, and began digging around in the soil. My activities quickly caught the eye of the male Kagu, which walked over to see what I was doing. I pulled an earthworm from the soil and offered it to the bird. The Kagu looked me over for a second or two and then deftly plucked the wriggling worm from my hand. I felt deeply honored.

As we headed back to our vehicle, the Kagus accompanied us for much of the way. At some point we must have reached the edge of their territory, because they abruptly stopped, watched us for a minute or two, then turned around and began walking uphill, back into the ancient forest. I like to think they will still be there when I return in a decade or two (Kagus can live for a long, long time). If they are, it will be a testimony to the good work of people like Yves Letocart and organizations like the World Wildlife Fund. ■

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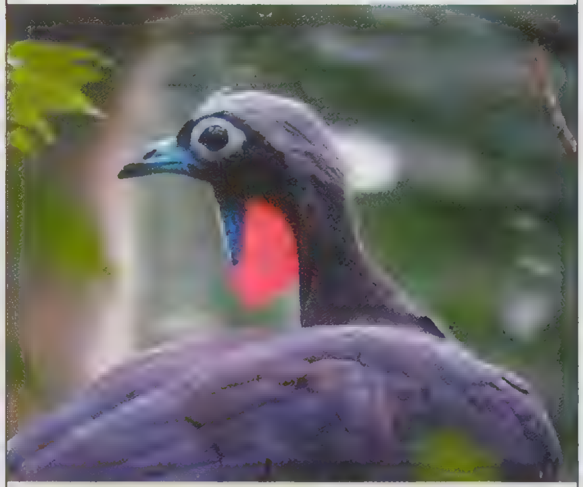

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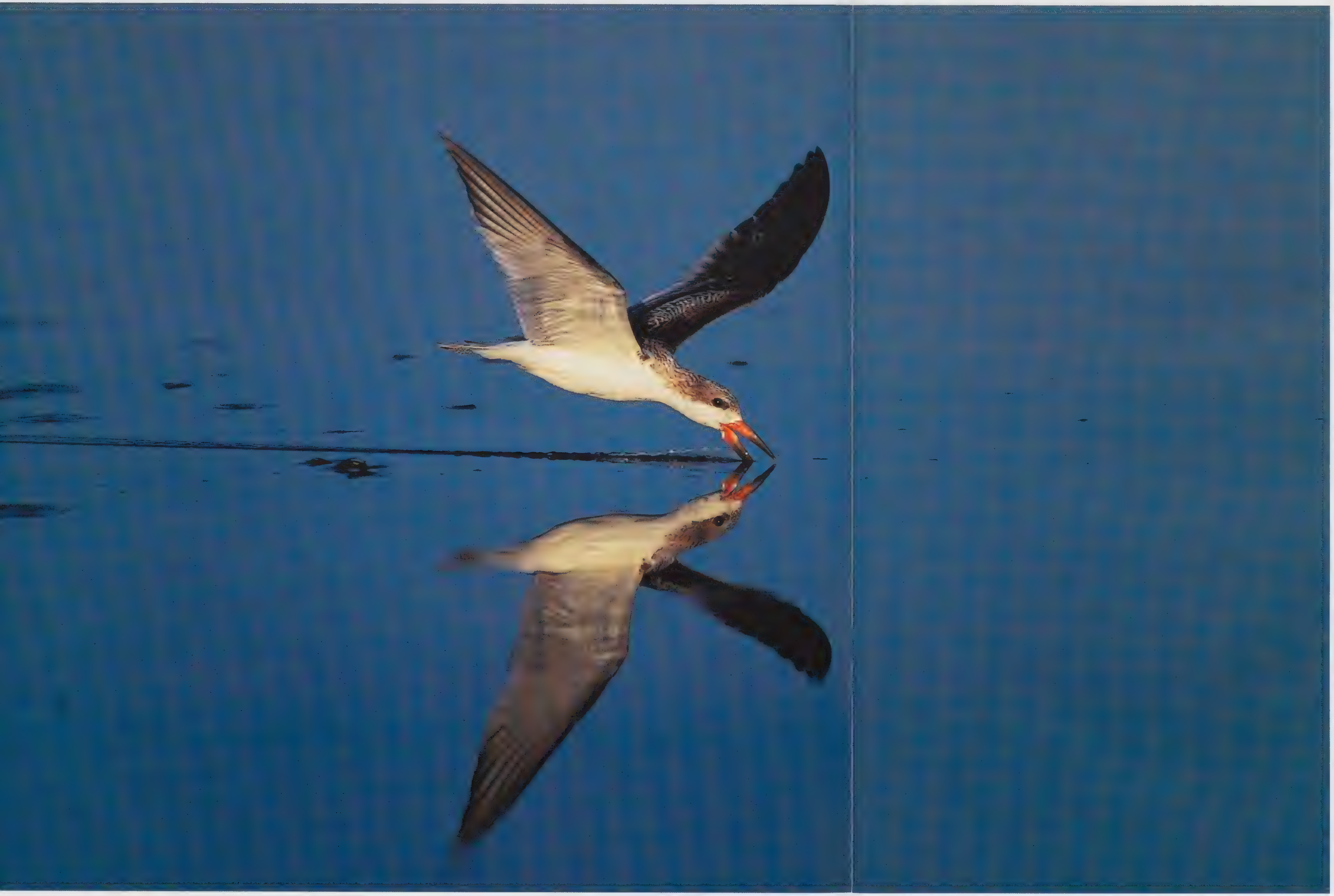


AN APPRECIATION OF BLACK SKIMMERS

Text and Photographs by Arthur Morris

The sun had just come up, and the morning was as still as any I've ever seen. Not a molecule of air seemed to be moving. I'd been fishing in the dark for several hours without success, near the Plum Beach Bridge in Brooklyn, New York. As I stepped out of the water and walked onto the beach, I saw a small tide pool, perhaps 10 yards long and a foot deep. A solitary bird, unknown to me at the time, was flying up and down the length of the pool. The bird was black above and white below, with a large orange-and-black bill. It was not only the bird's appearance that struck me as odd, but its behavior as well.

As this strange creature flew back and forth, it placed the lower half of its bill into the water and skimmed the surface. Curious, I stood watching the bird skim repeatedly back and forth, flying east, then west, then east again. I felt as if I were watching an endless baseline tennis rally in slow motion. As the bird flew across that tiny pool, its bill cut a

A juvenile Black Skimmer forages for fish in a shallow coastal pond, at left.

line on the surface of the water as straight as any made by a skilled draftsman. Whenever it encountered a shell or a stalk, it lifted its head for an instant to avoid the obstacle. Suddenly the bird jabbed its head down violently, jerked it sideways and backwards, and came up with a killifish clenched in its bill. I stood transfixed for more than half an hour before the bird finally veered away and flew off south across the bay.

Puzzled by what I had seen, I went to a bookstore and bought my first field guide, the *Golden Guide to the Birds of North America.* I quickly learned that my persistent fisherman had been a Black Skimmer (*Rynchops niger*) and that members of its tribe were the only birds with a lower mandible markedly longer than the upper mandible (the better to skim for fish, my dear).

When people ask me what first ignited my passion for birds, I have often credited a young Marbled Godwit I saw 11 months later at Jamaica Bay Wildlife Refuge. Looking back now, I realize that the solitary black-and-white bird skimming the pond that day, more than two decades ago, deserves the credit.

My first experience with nesting skimmers took place in the 1980s at Jones Beach State Park, where several dozen pairs nested in a large Common Tern colony. (The skimmers are afforded some degree of protection by the more aggressive terns.) I was just starting out in photography then but managed to make a few nice images of incubating birds. Later in the year, I encountered large roosting flocks of post-breeding skimmers on the old Tern

A mixed flock of adult and juvenile Black Skimmers stands on the beach at Cape May, New Jersey (below). The adults have uniformly black backs, whereas the young birds are a mottled dingy brown above. Right: "Dressed for success." A large flock of Black Skimmers attempts to stare down the author.

When people ask me what first ignited my passion for birds, I have often credited a young Marbled Godwit I saw 11 months later. Looking back now, I realize that the solitary black-and-white bird skimming the pond that day, more than two decades ago, deserves the credit.

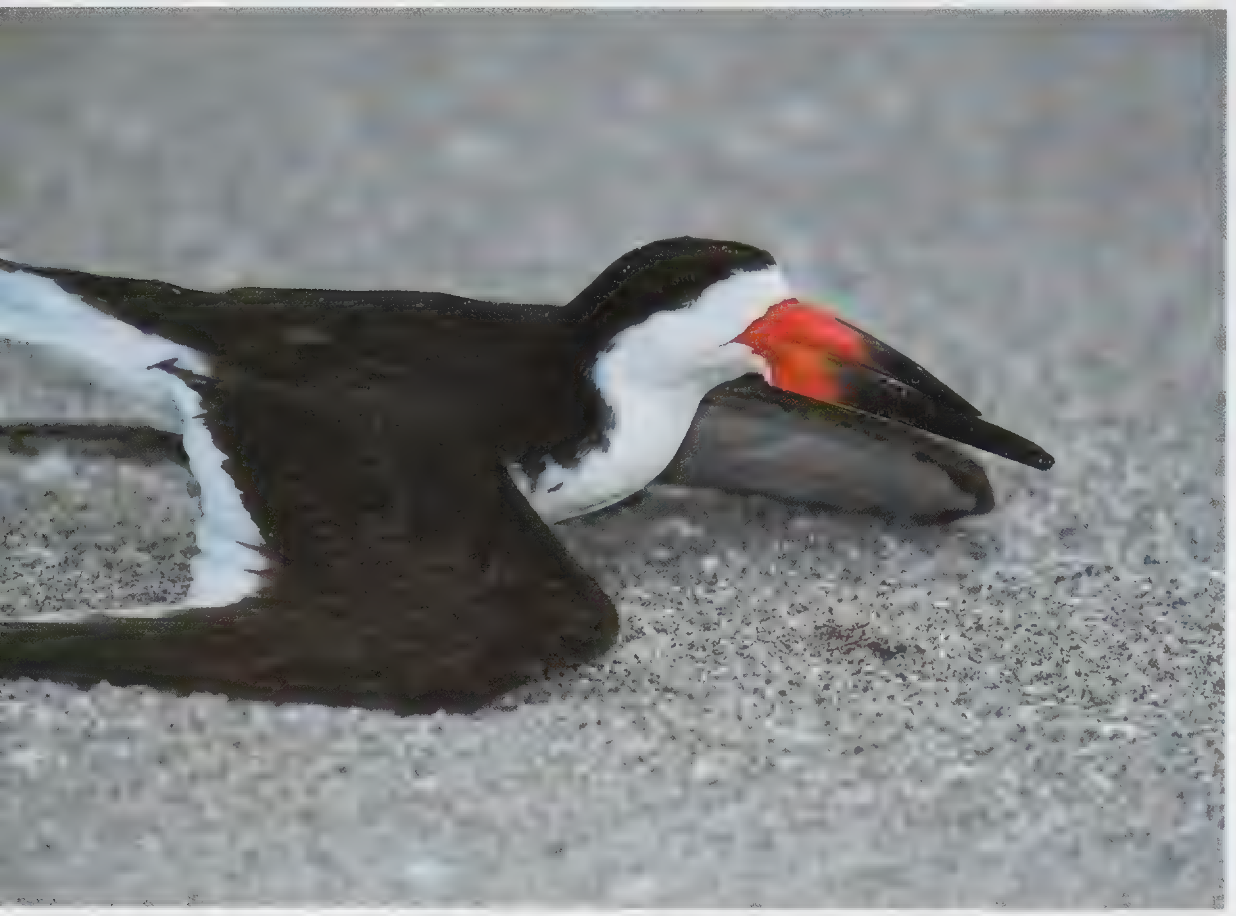
Nesting Area spit at Jamaica Bay Wildlife Refuge in Queens, New York. The largest flock, with the Twin Towers of the World Trade Center then in the background, consisted of precisely 750 birds—I counted them, one by one!

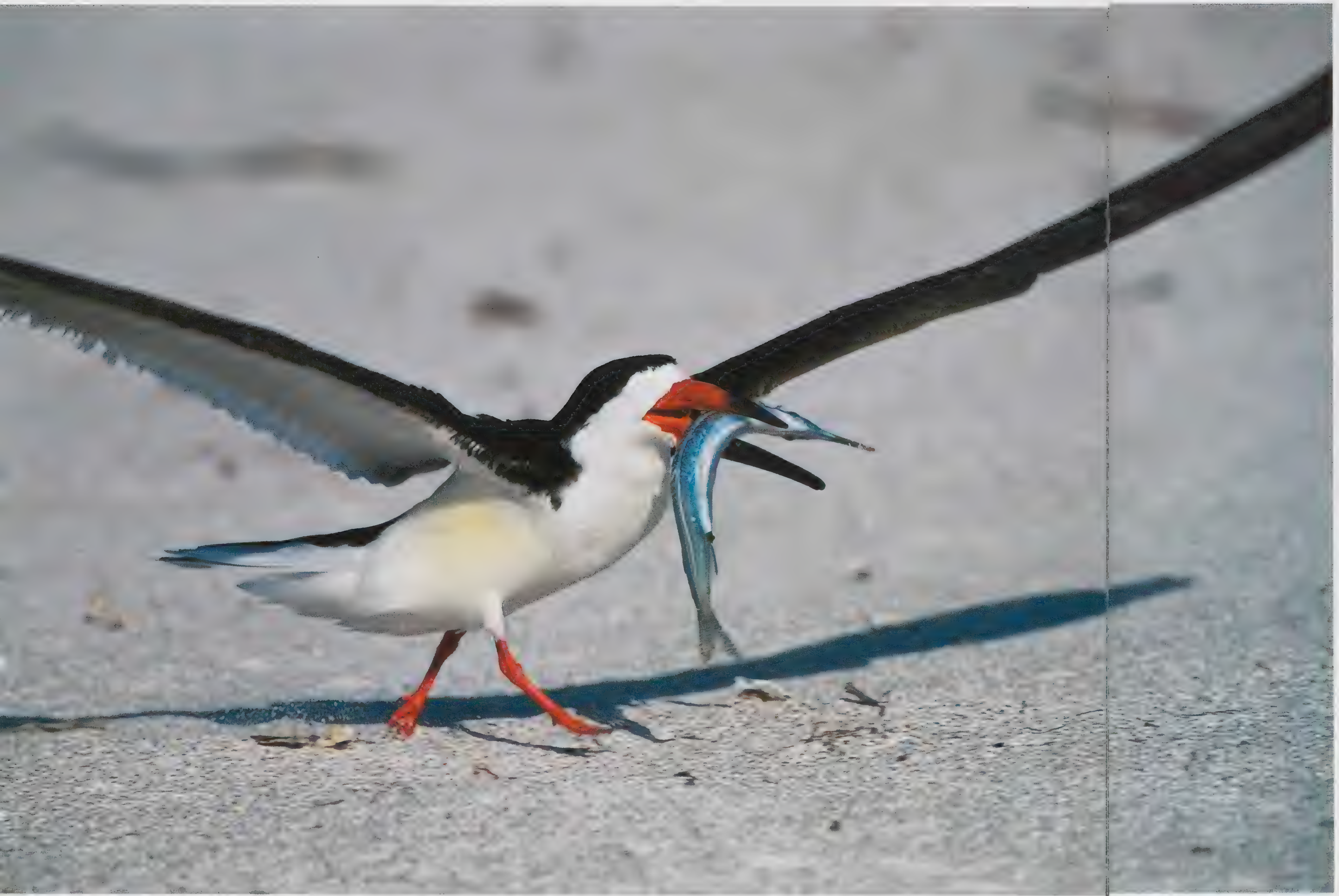
In June 2001, I visited a Least Tern colony on Lido Key in Sarasota, Florida, for the first time. Except for a few pairs with small chicks, the terns had finished breeding in May. Several pairs of skimmers were attempting to nest, but a big storm tide destroyed both the tern chicks and what few skimmer nests there had been. I returned to the same colony in June 2002 and found once again that most of the Least Terns had finished breeding. But to my amazement, about 50 pairs of skimmers were sitting on eggs, and many more pairs were making scrapes and completing their clutches. I returned several times during the next six weeks, attempting to document a variety of breeding behaviors including courtship, copulation, hatching, chick rearing, and fledging.

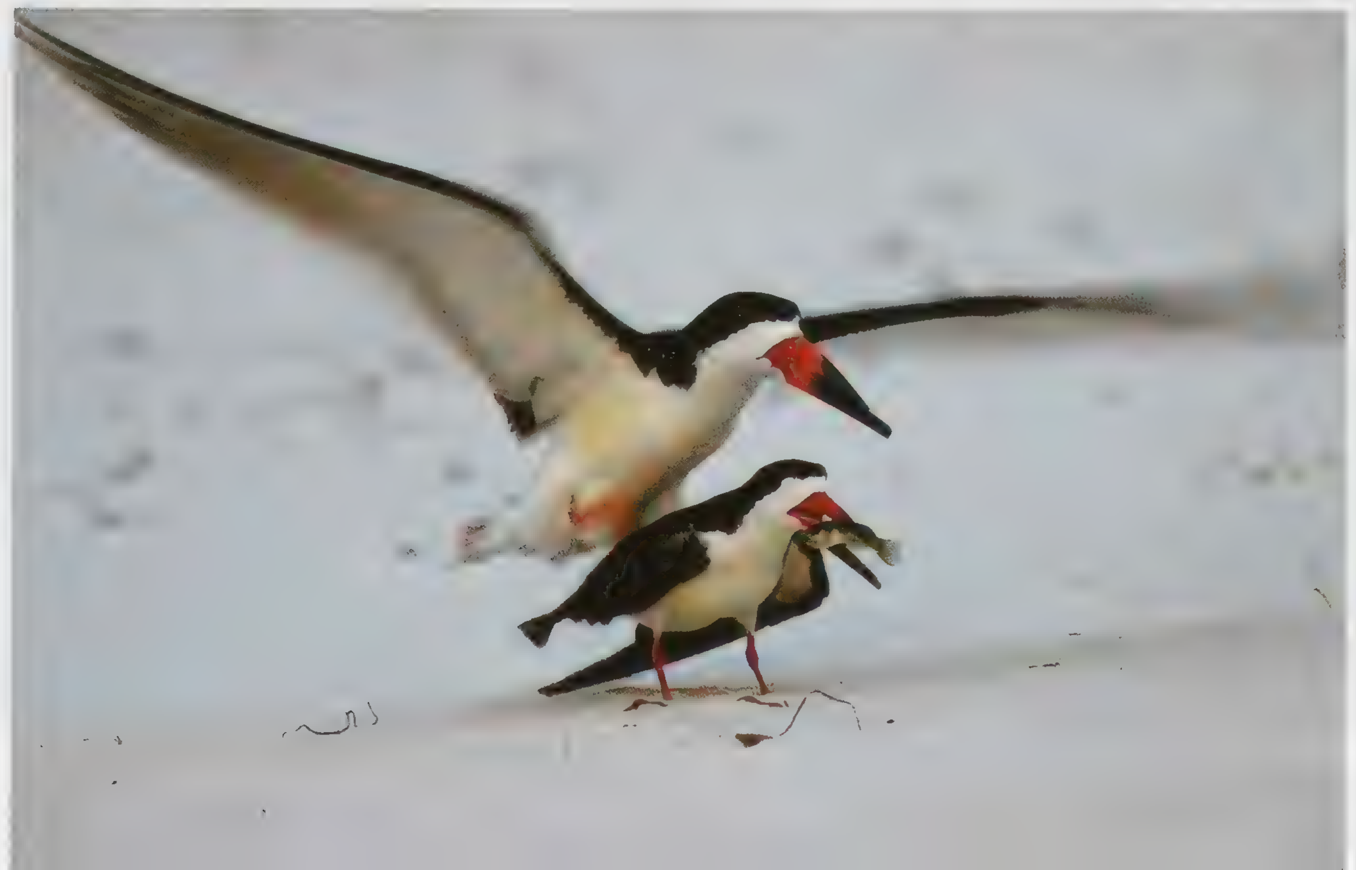
I would arrive at the colony well before sunup, get in position, and on clear days, photograph until no later than 8:30 A.M. to avoid causing undue disturbance to the birds. The skimmers' eggs and chicks face danger from overheating later in the morning and afternoon.

When I approached the colony, some of the adults would take flight, often landing near me to perform a nest-distraction display, scooting belly-down in the sand, wings spread and flapping. At times, it looked like they were trying to walk on their wings. I'd pick my spot and sit behind my lowered tripod just outside the roped-off nesting area. Within a few minutes, the

As the author approached the nest colony each morning, some of the birds would flush from their nests and perform a distraction display (below), going belly-down in the sand, wings spread and flapping. But within a few minutes, the birds would settle down, and calm would return to the colony.







Male skimmers would strut around, offering fresh-caught fish to females. Copulation often followed when a fish was accepted (left). A parent incubates its eggs (above right). Below right, a skimmer chick nestles beneath its parent.

birds would be back on their eggs, and the colony totally calm again.

Usually well away from the colony, I saw many a male skimmer land among small scattered groups of other skimmers with a fish, often a large ballyhoo or needlefish, in its bill. It would strut around with the fish held high, showing off until it found a female taker. Early in the season, the males often fed females without copulating with them afterward. Later on, though, acceptance of a fish by a female was always followed immediately by copulation. I never witnessed a single egg being laid, but I saw a few eggs in various stages of hatching.

By early July, the colony held dozens of young skimmers. The smallest ones pretty much stayed in the nest scrape, but after a few days, they began scurrying about the colony. Often, the chicks made a small scrape of their own and nestled into it for protection. The larger young, those growing juvenile feathers, often wandered 100 yards or more away from the colony.

Both parents fished, taking turns being away from the colony and tending the young. When an adult returned to the nest with a tiny fish, the smallest chicks seemed oblivious. The adult would have to hold the fish right in front of the tiny chicks to stimulate them into taking the food. As the chicks became larger, however, they were eager to greet the returning parent and grab the fish from its bill. Often, they ran up to the parent as it landed. With the young increasingly scattered about the colony, it sometimes took several minutes for an adult to locate its chick. I saw many adults with fish

The skimmer colony at Lido Key (above) is in an area with lots of beach activity. Still, the birds managed to have an extremely productive breeding season last year, with many pairs fledging two or more young. At right, a young Black Skimmer.

in their beaks walking around with seemingly lost, confused looks on their faces—"Just where is Junior?"

Adult skimmers often attacked chicks from neighboring territories by pecking at them. The youngsters either ran for their lives or dove into the nearest scrape for protection. On one occasion, I saw an adult skimmer that was obviously trying to swallow a freshly dead chick that was only several days old. It tried to choke the chick down its gullet for so long that I finally gave up watching. Throughout the season, the occasional Least Tern would dive-bomb a skimmer repeatedly, but I never witnessed a skimmer bothering a tern. When a gull or a crow flew over the colony, however, many skimmers would rise en masse to drive off the potential attacker.

The colony at Lido Key is located on a fairly active beach, with lots of people walking, fishing, sunbathing, shelling, and swimming. Most respect the signs and the roped off nesting area. In spite of occasional disturbances, 2002 was a wondrous year for the skimmers there, with many nests apparently fledging two or three young. Having the opportunity to photograph the Lido Key colony in such a successful year was one of the highlights of my career, and I shall cherish the memories of those down-covered chicks crouching in scrapes at dawn for as long as there are skimmers skimming. ■

Arthur Morris is a world-renowned bird photographer as well as an educator and author. His most recent book is The Art of Bird Photography. *Visit his web site at <www.birdsasart.com>.*

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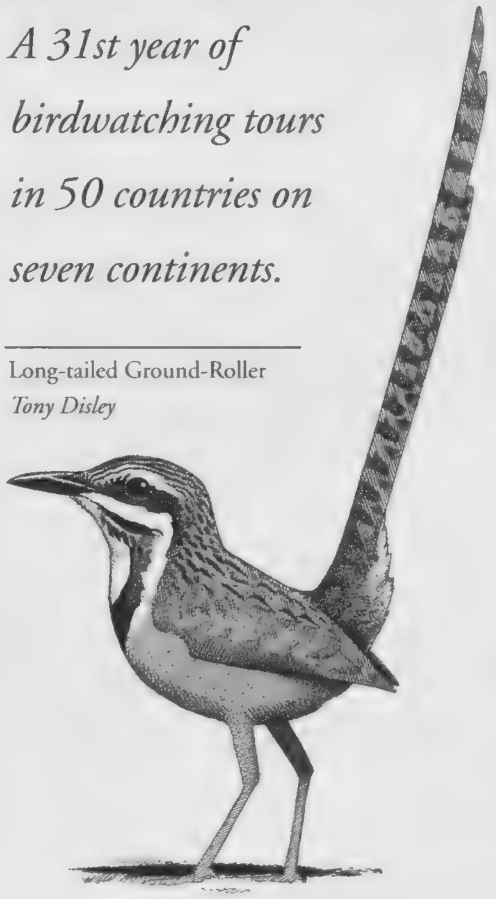

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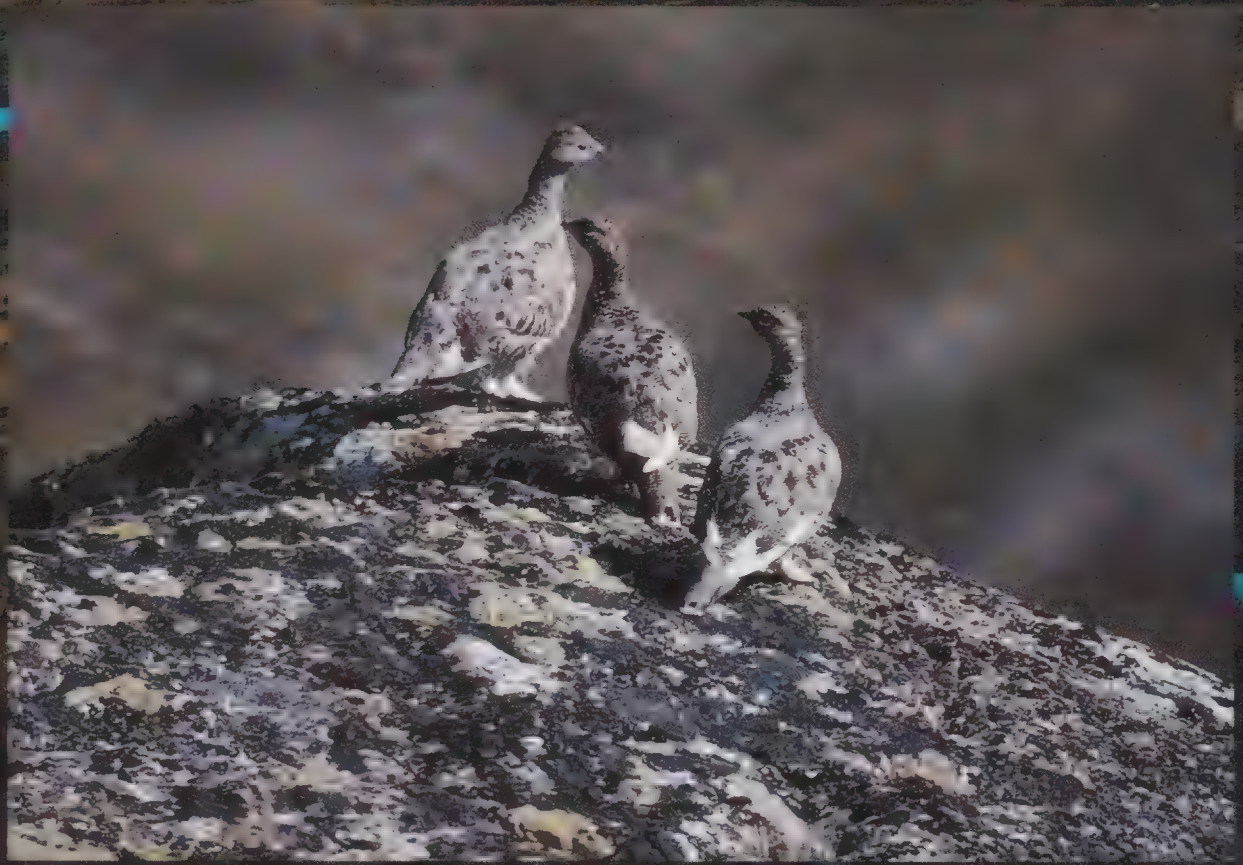
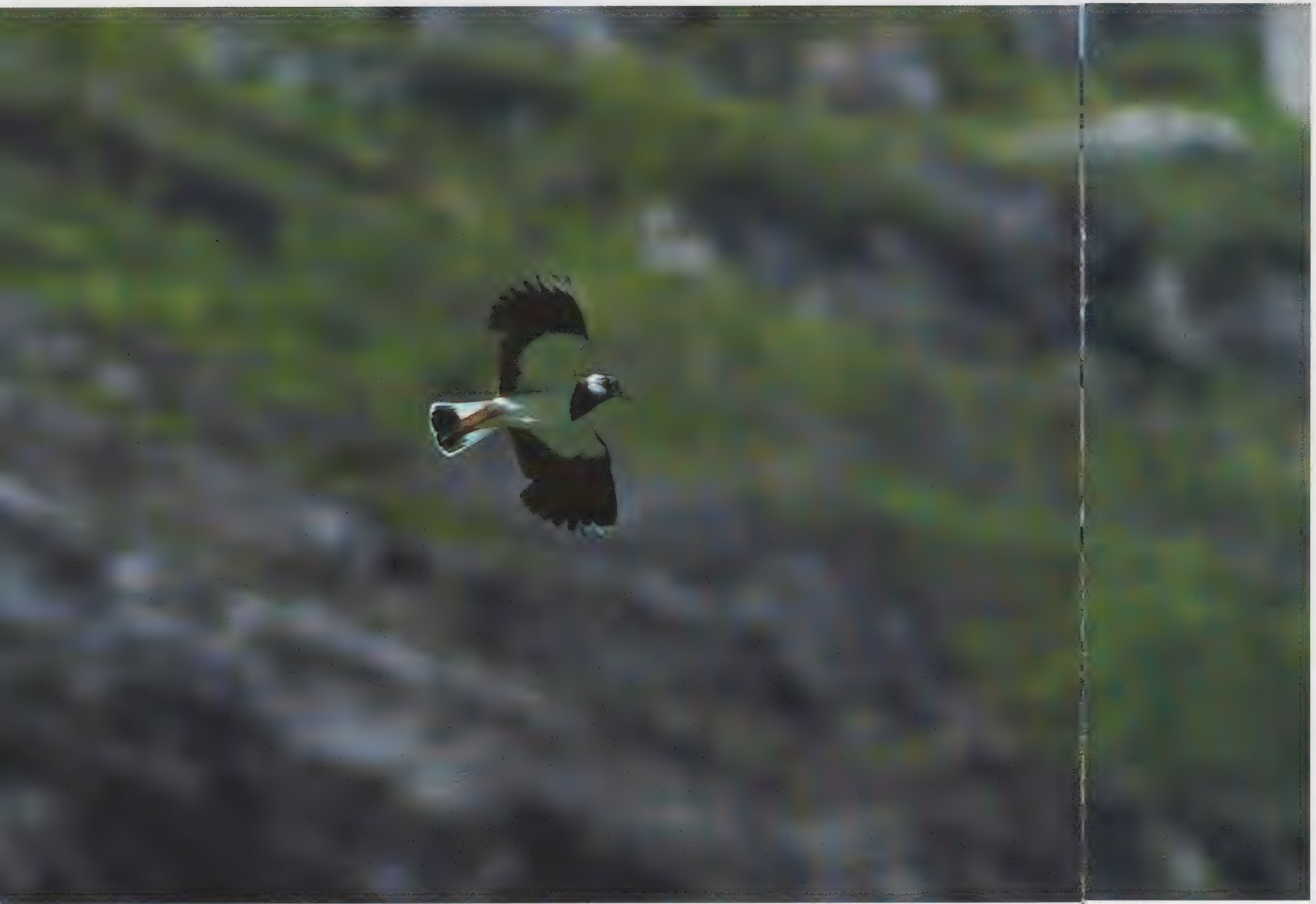


BY ROBERT MILLER

PHOTOGRAPHS BY EDDIE CHAPMAN

In early June, the deep snow lay half-melted on the Hardangervidda's hills, with wide streaks of golden-brown tundra grass struggling to emerge from winter. The streams and ponds of Norway's Vidda—the largest mountain plateau in Europe—overflowed with snowmelt, and male Meadow Pipits flew straight up from the patches of grass, calling optimistically for mates. It was winter-day cold there, even in June, but the rain squalls that had periodically drenched us throughout the day had moved on, leaving welcome shafts of sunlight breaking through the clouds onto the treeless landscape.

My wife Donna and I walked for about two hours, which only gave us time to cover a sliver of the Vidda's formidable 3,860 square miles—about two-thirds of which is protected as a national park, the largest in Norway. It's the kind of place where hikers go to find solitude, mystics to find God, and birders to find Rock Ptarmigan—which we did.



With their elegant plume and unique rowing flight style, Northern Lapwings (above and right) are one of the most distinctive and beautiful birds in Norway. They are common in fields and meadowlands.

Previous spread: Even in June, Norway's Hardangervidda still has a fair amount of snow. Inset photo: a trio of Rock Ptarmigan looks out over the plateau.

Coming around a bend, Donna spotted two of them making their way along the side of the road, the male's breeding plumage closely matching the color patterns of the Vidda in spring. The birds were remarkably unflustered by our presence.

The Rock Ptarmigan is but one of several species on the Hardangervidda that we could see in North America if we traveled to the far north from our home in Connecticut. A Eurasian Dotterel—a plover seen only rarely along the Pacific Coast and in northwestern Alaska—thoughtfully posed for us, showing off its handsome gray-and-russet plumage. A European Golden-Plover skittered along the hills, looking for a likely summer home.

Norway has a rich birdlife, with about 450 native species, and a varied mix of habitats ranging from its long coastline and dramatic fjords to its beautiful farmland in the southwest and its boreal forests and tundra farther north. It's also extremely accessible—the country's laws of access allow people to walk on any land not used to raise crops. Traveling to a distant place, far from your home, reawakens your sense of marvel at what's around you. Even the birds at the window feeder are special. When you return home, you might look anew at things you had previously taken for granted—the bright crimson of a Northern Cardinal, the shocking blue of a common Blue Jay.

Foreign birders visiting Norway often head for the coast north of Trondheim, where the offshore islands provide ideal nesting areas for sky-filling flocks of seabirds—Atlantic Puffins, Northern Gannets, Razorbills, and various gulls. But if Norway is narrow, it is also long, and it is served by, at best, only two-lane asphalt roads. Rather than rack up frequent flier miles on local flights, we opted on a four-day overland trip, taking us from the farms and lakes of the Jaeren region in the southwest, up the fjords to the Hardangervidda, and then back to Oslo.

When birding in an unfamiliar place—where you don't know the roads, the fauna, or in this case, even the language, and you have only a few days to look around—we've found it's better to swallow our pride and travel with a professional guide. Searching the Internet, we fortunately stumbled onto the web site of Eddie Chapman—a Glasgow-born Scot who grew up in Manchester, England, but has spent 28 of his 45 years in Norway. The dialect he speaks is a Henry Higgins-busting mix of all three places. Eddie brought his love of birding from Great Britain to his new home in Voss, where he and his wife Britt live. He soon found himself in great demand with cruise ship owners who wanted him to lead ecotours, and he now works full-time as a guide. Eddie was the perfect guide for us. He knows all of Norway's backroads and hidden places, he can translate Norwegian bird songs into English, and he has an indefatigable zest for showing off the country's birds.

We traveled by train from Oslo to Stavanger on Norway's southwest coast, where Eddie met us at the station. We identified him not by a carnation in his lapel, but by the binoculars hung around his neck. We climbed into his van and drove to Algard, a small town about a half-hour drive away, where we stayed the next two nights.

> *In the stillness, we could hear the distant tinkle of sheep bells. Redshanks strode past in the field, and Northern Lapwings circled overhead, protecting their nests.*

Evenings are endless in Norway's late spring

Eurasian Oystercatchers forage along the Jaeren coast (above). These birds feed on mollusks and bristleworms.

and summer. Dusk begins falling at about 10:30 P.M., but it's not really dark until after 11:00. Eddie suggested starting our trip by going out to hear the *nattsongarar* (night singers), warblers that don't start singing until the sun goes down. He drove us to the beautiful valley at Lake Kyllingstad to hear one, a Sedge Warbler. Right on schedule as dusk fell, we heard and even saw one. But it wasn't just the bird that moved us; the entire scene was wonderful. Cows wandered toward us from fields framed by granite hills. In the stillness, we could hear the distant tinkle of sheep bells. Common Redshanks strode past in the field, and Northern Lapwings circled overhead, protecting their nests. We had never before seen a lapwing, and we fell in love with their slate gray-feathered, plume-headed good looks. Even though by the trip's end we knew how common they are, we never stopped admiring them. First loves are hard to shake.

One of the highlights of the evening came just at dusk, when a Eurasian Woodcock took flight. It's a different species than the American Woodcock—*Scolopax rusticola* rather than our *Scolopax minor.* Instead of the crazy-pattern corkscrew flight of our woodcock, the Eurasian Woodcock flies in broad, beautiful circles, letting us follow its silhouette in the twilight sky.

TOM VEZO

The hedges and bushes surrounding the farmlands near Orrevanet Lake teemed with European songbirds, such as the stunning Bluethroat (right), as colorful as any New World warbler.

After a protein-hearty breakfast at our hotel in Algard—Norwegians like smoked meats, cheese, and pickled herring with their eggs—we spent a full day birding the farmlands, lakes, and coastline of the Jaeren region, the breadbasket of Norway. Its farms (subsidized by the profits reaped from the country's North Sea oil) are handsome, sleek, and productive. Central to our travels was Orrevanet, a lake surrounded by those farms. Scouting the fields, we saw a Eurasian Curlew and listened intently to its breathtaking, mournful cry. Walking along a field's edge down to the lake we saw Bar-tailed and Black-tailed godwits, both rarities on our Atlantic coast, although the Bar-tailed Godwit breeds along the Norton and Kotzebue sounds in Alaska. Because they flew from the same field, side by side, we had an excellent chance to compare and contrast the two species in the field, rather than on a page in a field guide. One of the many pleasures of this trip was the chance to see such birds as these godwits and Northern Wheatears as everyday species rather than as freak visitors. Granted, we had to travel far to see them, but no less far than a trip to Baffin Island or Nome, Alaska.

And the hedges and bushes at the farms' edges teemed with European songbirds: Sky Larks and Linnets and Chiffchaffs and Reed Buntings. Because we didn't arrive in Norway seeking any particular species—well, maybe the Rock Ptarmigan—every tit and finch was a find for us. But among the small birds, the Bluethroat, as gorgeous as any New World warbler, really caught our eye. And at the end of a walk to the lake's edge, a Reed Warbler burst out in song on our left, only to be matched by a Willow Warbler on our right, like two tenors battling it out onstage at the Lyric Opera.

Throughout that day, a steady, sometimes hellaciously strong wind blew. That kept a lot of birds battened down, and left us using Eddie's car as a windbreak. We stopped at Revtangen, Norway's oldest bird research center, founded in 1938, but the wind had kept its mist nets empty.

By the end of the day, we were ready for dinner and a good night's sleep, but at Eddie's urging, we headed out again at 10:30 P.M. to hear more *nattsongarar*—first the Grasshopper Warbler, with a song accurately described by Eddie as the rasp of a fingernail running along a plastic comb's teeth. Then, at a second stop, we walked past a farmhouse with its lights on and heard the calls of a Corn Crake and a Common Quail, two birds almost never seen and heard only by being at the right field at the right time. The Corn Crake, a member of the rail family that prefers meadows instead of marshes, is becoming increasingly rare in Norway. When ornithologists find them, they encourage the farmers to delay their hay mowing to save the birds' nests.

The next day was a long ride through the fjord country, which is every bit as extraordinary as its reputation, with glacier-scarred cliffs sheering straight to the blue-green water of the fjords and white waterfalls cascading down great, gray rock faces. At Eidfjord, the road heads upward, not in switchbacks or long inclines but in tunnels that corkscrew up though the mountains themselves. And at the top, we were on the grand Hardangervidda.

Once outside the car, we realized the light clothing that had stood up even in windy Jaeren wouldn't do. We needed flannel shirts, sweaters, parkas, wool hats, and gloves. It was early in the season, so the birds were in ones and twos rather than in flocks. But we saw the ptarmigans and golden-plovers and Lapland Longspurs—birds at home on the vast tundra, where trekkers can hike for days without meeting other humans. There were also Fieldfares, robinlike birds we'd first spotted in the parks of Oslo. They, like the lapwings, seem omnipresent in southern Norway. Eddie said he couldn't see a logical reason why Fieldfares, which thrive in urban backyard gardens, also settle in the wilds of the mountain plateau. But there they were.

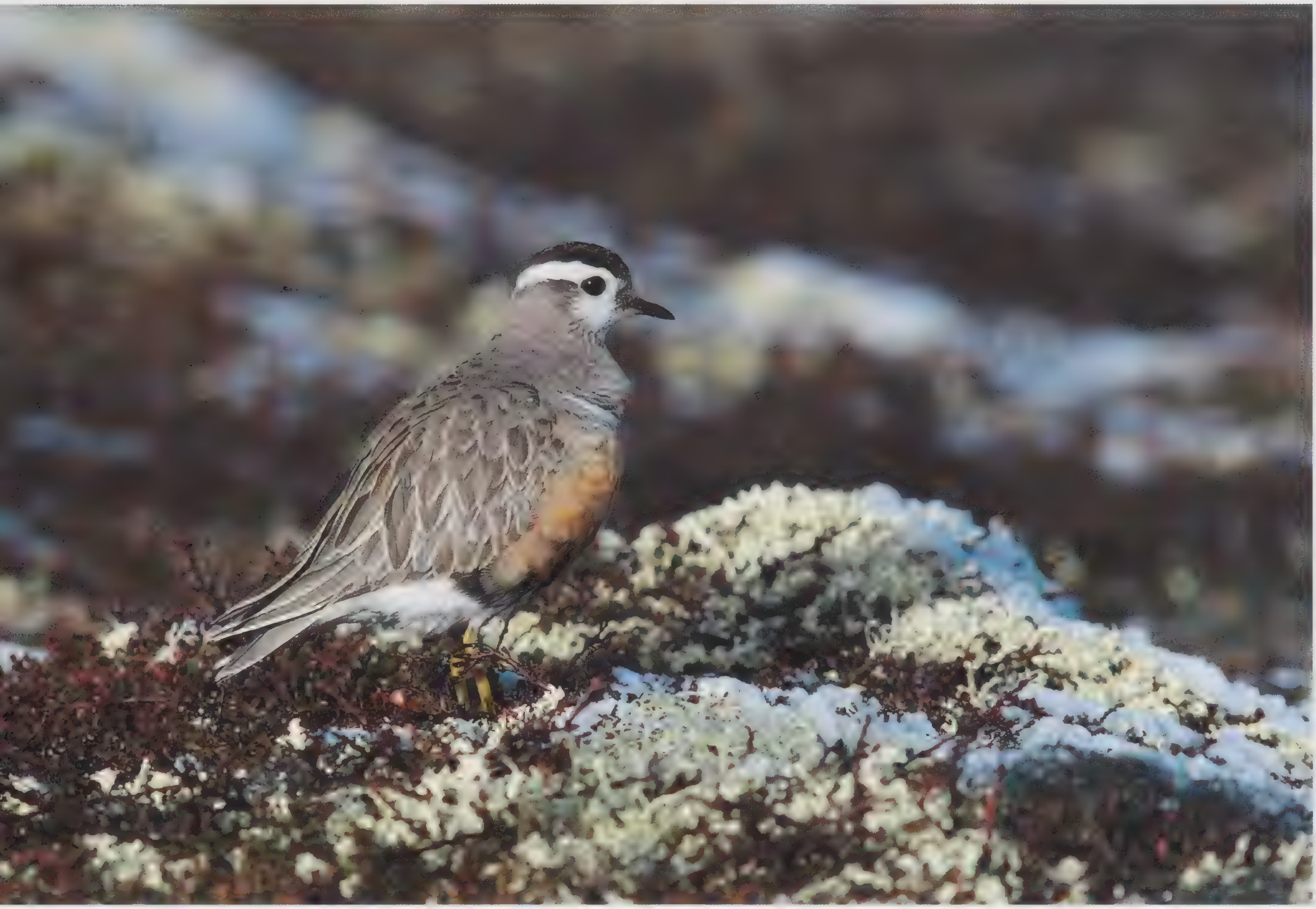
Herds of reindeer often graze the Vidda, but they were wandering elsewhere as we walked. Although we didn't spot the monarch of the Hardangervidda, the Gyrfalcon, we did see a Rough-legged Hawk soaring overhead.

The Hardangervidda is a cold, lonely, windswept area where tundra birds and reindeer abound. At right, the only sign of reindeer on this day was a pair of antlers attached to a piece of skull. Below, a European Golden-Plover calls plaintively at passersby to defend its nest.

Herds of reindeer often graze the Vidda, but they were wandering elsewhere as we walked. We did see two lemmings scurry off beneath the rocks. The more lemmings, said Eddie, the better the birdlife. Although we didn't spot the monarch of the Hardangervidda, the Gyrfalcon, we did see a Rough-legged Buzzard, the same species as our Rough-legged Hawk, soaring overhead.

The western side of the Hardangervidda is wilder and more mountainous, with a massive glacier called the Hardangerjokulen. On our second day, leaving from the town of Geilo, we drove to Budalen on the eastern side, following a road along the side of a deep valley scooped out by an ancient glacier in past millennia. We scoured the full spring pools for Red-necked Phalaropes, but we were a week or more too early to see them. We had a great look at a Willow Ptarmigan—the striking, russet cousin of the Rock Ptarmigan. Later, scanning a pond at the bottom of the bowl, we watched an Arctic Loon dive and resurface.

On the way home, one long-time quest of ours finally ended on a ringing note. We had previously traveled to Colorado, Wyoming, Arizona, and Alaska and stood patiently by many a rushing mountain stream, hoping to spot a dipper. Each time, we failed. The White-throated Dipper—a close cousin of the American Dip-



A Eurasian Dotterel—a plover seen only rarely along our Pacific Coast and in northwestern Alaska—thoughtfully posed, showing off its handsome gray-and-russet plumage.

per but decked in a formal starched shirt—is the national bird of Norway, and a beloved part of this landscape with its numerous cold, clean brooks. Despite our willingness to block traffic on several back-road bridges, the dippers at first were not forthcoming. Finally, we stopped, waited, watched, and waited some more, until Eddie said "There!" Working its way down the wet rocks by the edge of the stream was our dipper. Not the Holy Grail, but nonetheless a wonderful bird.

Our last morning's birding was anticlimactic. We visited the Nordre Oyeren, a large freshwater lake east of Oslo. The temperature stood at a sultry 80 degrees Fahrenheit, and the birds were hunkered down. We did see a lone Whooper Swan. The rest of its flock must have already flown to breeding grounds in eastern Scandinavia and Russia. Gazing through a heat-induced haze rising over the lake, we spotted a high-flying Osprey. A short time later as we hiked up a logging road, four *songfugler* (songbirds)—Great Tit, Chaffinch, Blackbird, and Willow Warbler—gave us a lovely farewell serenade. Later, as we unloaded our gear from Eddie's van, we promised to send him some starlings, which are declining in numbers in Norway.

In the end, all things totaled, we identified 116 birds and saw more than 60 life birds—a great trip by our undemanding standards. And we got to eat Norway's great bread, drink icy Ringnes beer, marvel at the great funeral craft at the Viking Ship Museum, and scream along with Edvard at the Munch Museum.

Norway, we discovered, is a beautiful and easy place to explore. Almost everyone speaks some English. We only had a brief taste of Norway's countryside, not the Grand Tour, but it has stayed with us. We're not exactly planning our next trip yet—travel isn't cheap, airplane rides in cramped tourist seats leave your torso wrenched for days, and there are jobs and gardens to attend to at home. But there *is* the matter of the Gyrfalcon and the Red-necked Phalarope we missed. And Elise, a friend of ours who lives in Oslo, has a family summer home on the northern coast. "That's where you really should go," she told us. "That's where you can see all the seabirds." ■

Robert Miller is a reporter for The News-Times *in Danbury, Connecticut.*

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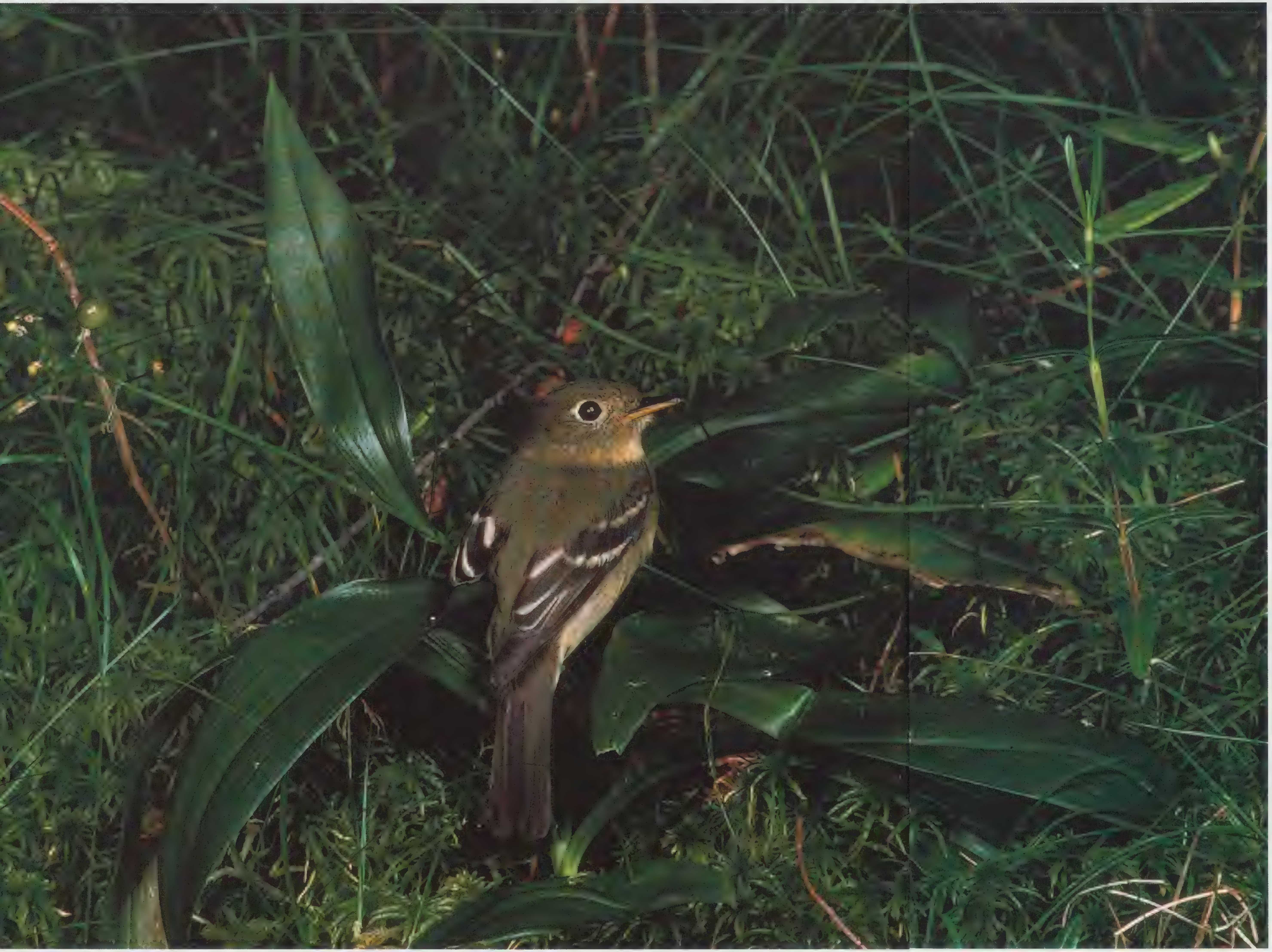


ON THE TRAIL OF THE YELLOW-BELLIED FLYCATCHER

TEXT AND PHOTOGRAPHS BY WILLIAM BURT

Rifling through the pages of an obscure journal, I once happened on a little jewel of an article. The journal was a 1976 issue of *The Oriole,* one of those little bimonthlies devoted to the birdlife of a certain state or region, in this case the state of Georgia. The article was about the Bachman's Sparrow, a plain brown bird of the southern pinelands known for its sublime song, and the author was one George Andrew Dorsey.

Generally, such periodicals are the place to look for information only—names of birds and dates and places, lists, punctilious analyses of field marks or population trends, blow-by-blow accounts of finding rarities, and so forth—but this piece was different. This was a personal piece, a portrait of the bird, essentially, with observations on its habits, habitat, and song, all based on the author's long familiarity with the bird and his obviously keen eye and ear. But what came through most was his humble, unauthoritative tone, and his capacity for appreciation, especially of the song: "one of the most beautiful sounds in nature," in his estimation. So heartening and so glowing in its context was this little piece by Mr. Dorsey that I wrote to tell him so; but the letter came back, unopened, with the word penned on the envelope decisively in red: *deceased.*

I love it when I find this keen, concentrated kind of ardor, whether it's for a certain bird, or place, or a piece

The Yellow-bellied Flycatcher is not really rare or even particularly beautiful. But what it does have in abundance are place (nesting in beautiful pristine habitat) and personality.

Yellow-bellied Flycatcher nest sites are "Edenic—mossy, shady but open and inviting, simple, idyllic as a childhood lawn. There was no understory, no distracting muss or fuss or incongruity, no unnecessary color or detail—just the gray of trees and the green of moss rolled out beneath, so fresh and plush it seemed a shame to walk on it."

of art or music, poem, poet, whatever the aesthetic object of appreciation. Appreciation: that's the signal thing to me, the sure sign that a person is alive and sensing. And appreciation, after all, real appreciation, is something sharp and discriminating, not broad and all-embracing. It is focused like a laser, and it goes deep.

Others in the nature literature have expressed this appreciation for a certain bird, and often as not a certain place, as well. One Reverend Peabody of Kansas, for example, who wrote romantically about the Yellow Rail and a certain North Dakota coulee; and John Muir, the mystic Scotsman of the Sierra, whose reverence for things wild is so winsomely infused in his word portrait called *The Water Ouzel.* And Arthur Cleveland Bent, of course, the prodigious bird biographer, whose feeling for bird and place alike comes through in some of his *Life Histories* accounts: of the Western Grebe, say, and the Western Meadowlark, and Yellow-headed Blackbird.

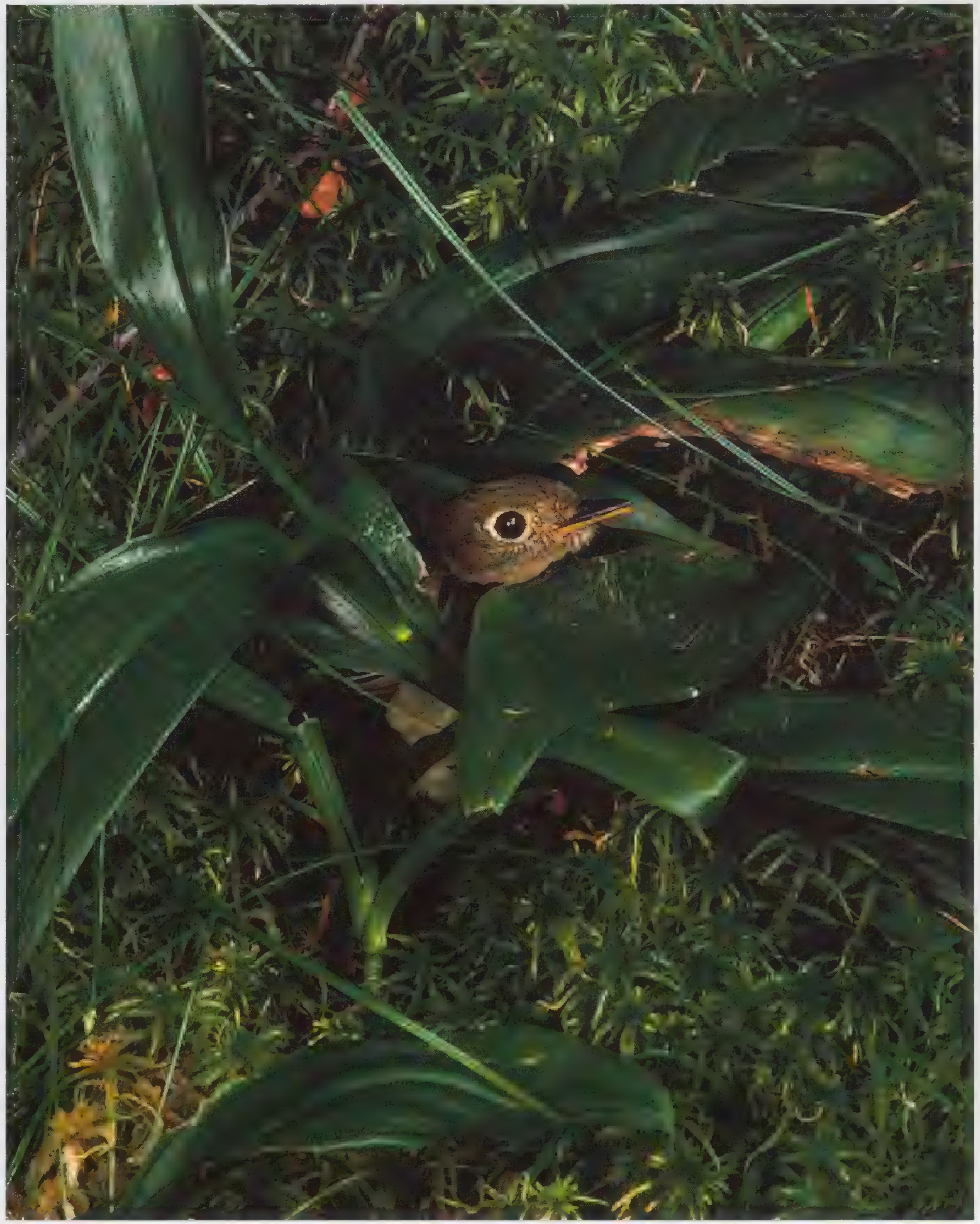
> *Always, the Yellow-bellied Flycatcher lives in the wildest and prettiest of places, places of tall spruce and tamarack, and moss, and shade: places that remind you of cathedrals.*

Another man who had long been smitten by a certain bird, though he never wrote about it, was W. Powell Cottrille of Jackson, Michigan, an ardent admirer of the warbler group and one of the few men ever to find the nest site of the elusive Connecticut Warbler. But the Connecticut, coveted though it is by most bird people, is not the Cottrille favorite; not by a long shot. None of the warblers is. No, that distinction goes to quite another, much less celebrated bird.

Cottrille, 87 years old and still a practicing osteopathic physician when I met him, had known a great many birds in his time, in many places. And with his wife, the late Betty Darling Cottrille, he had found a great many of their nests. Indeed, these two thrived on the challenges of finding nests: the rarer and more difficult the nest the better, in their view. In this they became an almost legendary team—she with her discriminating ear, and he with an eye so keen it often irked, even exasperated his companions in the field, including even her. "They would actually get *mad* at me," he said, with a not quite convincing naiveté. Together the Cottrilles established at least a dozen first state nesting records, most of them for Michigan and Minnesota, and most for birds that nest in bogs, especially warblers. Not surprisingly, their company was thus often sought by eminent ornithologists and photographers, including Eliot Porter, with whom they spent nine successive seasons in the field.

One of those early nest discoveries, Cottrille said, changed him forever. One morning in June 1957, the Cottrilles were exploring a little bog near the town of Seney, Michigan, with friend Lawrence Walkinshaw, an ornithologist, when Betty saw a small obscure bird with grass in its bill. She summoned the others, and all eyes followed the small bird to the most exquisitely hidden nest, sunk deep in a mound of sphagnum. The bird was a Yellow-bellied Flycatcher, and the nest was the first ever found in Michigan.

Powell in particular was intrigued by this unfamiliar green-tinged bird with the yellowed underparts that snugged its nest in the moss—so intrigued that he took his lunch, and a stool to sit on, and spent the whole day within sight of that nesting place, just watching. A week later he heard another Yellow-bellied Flycatcher in another bog, and found another nest; and he was hooked. "Ever since," he said, "whenever I'd hear one I'd stay until I found the nest." He tracked down nests nearly every year thereafter, not only in Michigan, but in Minnesota (he found the first for that state, too), and in the Connecticut Lakes Region of New Hampshire, where he found the preferred site to be the base of a mossy, moldering old stump.



Spotting a nest of this tiny flycatcher in a lush carpet of forest vegetation is a challenge few people can meet. The best thing to do if you hear the adults calling is to sit and watch and wait.

In all, he found about 20 nests. The secret, he said, lay in knowing the birds' calls, in particular the female's. Unlike the male's snappy *k'lick, k'lick,* hers is a soft, almost melancholy *p'wee, p'wee,* and it's "so pretty it's always a surprise," Cottrille said. Moreover, it means that there is a nest nearby, and that she's off feeding. "Just sit and wait," he told me; "You'll see that she keeps going to a certain area. Get in close, sit and wait some more, and she'll come in and perch on a low branch and flip her tail, and call. Finally she'll take off like a shot and dart down into the moss, and disappear." Then you have only to walk up carefully and "put her up," he said.

A prescription simple enough, to be sure. But "in practice," as Eliot Porter noted, "keeping track of a small, well-camouflaged bird in

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the leafy environment of a sphagnum bog is something else again." And an environment often roaring with mosquitoes, he might have added.

But why this, the tiny obscure bird of bogs? It's not really rare, not even uncommon in just the right places. It's certainly not a striking thing to see; indeed, it's scarcely even visible in the shady gray and green of its environment. And, but for its subtle yellow wash, it looks just like any other carbon-copy member of its eye-ringed, wing-barred *Empidonax* genus (which also includes the Least, Alder, Willow, and Acadian flycatchers): in fact, but for its distinctive calls and its distinctive boggy haunts, it would not even be distinguishable in the field. What is the lure then? I asked. What does this little bird have that others don't?

These birds have personality to burn, more even than any of the warblers. . . . They're gentle, solicitous for each other, yet playful, sometimes playfully combative.

It has two things, he said. The first of them is *place.* Always, the Yellow-bellied Flycatcher lives in the wildest and prettiest of places, places of tall spruce and tamarack, and moss, and shade: places that remind you of cathedrals, he said. Always. And the microcosm chosen for the nest is itself a paradise, he added. And if anyone would know, Cottrille would.

The other thing is personality. These birds have personality to burn, he said, more even than any of the warblers (and that, from him, is some concession). It's there whenever you watch the two birds of a pair, he said; it's in their interaction and their "nuances of communication." They're gentle, solicitous for each other, yet playful, sometimes playfully combative. Having watched from a blind for hours on end, Cottrille had often seen the male chase after his mate and importune her, even scold her, until she returned to the nest and resumed her incubation duty; he's seen the female in hot pursuit as well. "I think they're more fun than going to a show," said Cottrille.

Call it anthropomorphism, this profiling of a feathered personality; but birds do have personalities, undeniably, and thus do they differ from the annelid worms and protozoa and planarians. Besides, said the man who spent more hours in the bogs than most of us ever will, and knew his subject better: "I believe I've earned the right to some anthropomorphism."

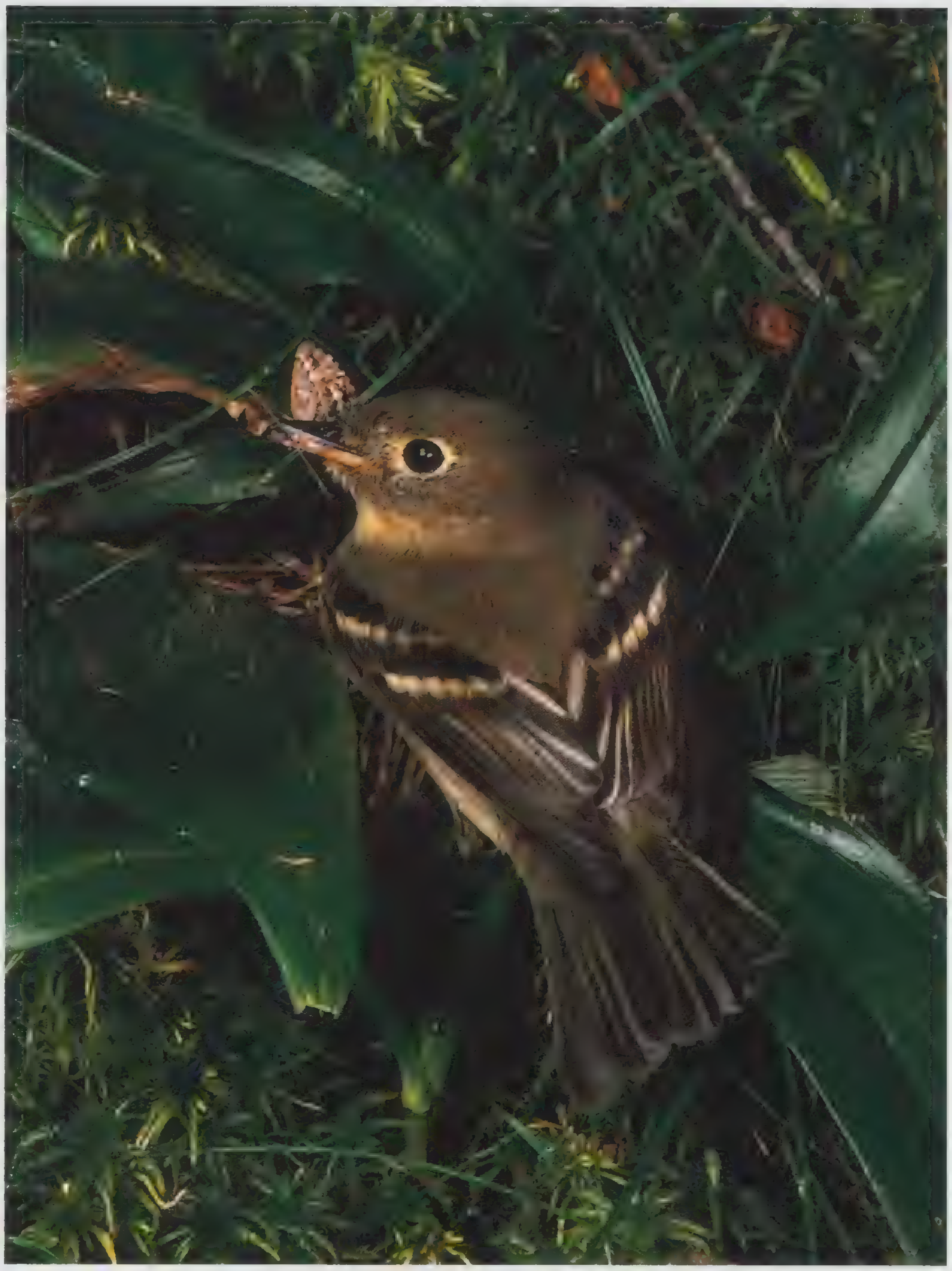
Having heard Cottrille talk about his favorite bird you cannot help but come away a bit smitten yourself, and perhaps a little put to shame, as I was. I like to think I'm attuned to things in the outdoor world, and I'd surely spent my share of hours in the northern swamps and bogs; so why had I not met this engaging mite that lives where you find moss and shade? Had I never been in just the right places, or was it just a question of awareness and attention focused elsewhere? In any case, I knew I'd missed something. But I also knew I'd never be in a mossy bog again and fail to listen for the Cottrille flycatcher.

The chance came soon, on a visit to north-central Minnesota, where I was scouting for Connecticut Warblers. I'd spent a week in the bogs there, and I *had* been paying keen attention but had heard no Yellow-bellied Flycatcher calls. Then one day I was exploring some new territory, plodding along past a tall shady stand of spruce, and there it was, the Cottrille nest call: *p'wee.* This was my chance: I'd do just as directed.

I stalked into those shady woods and sat down, on a big mossy hump, and waited. It was quiet for a minute or two, but then the call resumed, nearby. And here she was, perched low on a stubby branch, with a 10-inch blade of grass in her bill. She sat pert, flicked her tail and called, repeatedly, then darted out and stopped dead in midair, hovered a foot or two above the moss, and darted back to the same perch to resume the tail-flicking and calling. She did this several times, darting out and fluttering and darting back again; but then one time she darted for the moss and disappeared—and I had her. Soon, she came rocketing out again, without the blade of grass, from beneath some pointed blades of three-leaved false Solomon's seal.

No need to even walk up and see. I knew I had my nest. The Cottrille strategy had worked.

And it worked again, 300 yards away, in the same mossy woods. Again I heard the call and sat to watch and wait, and again a bird appeared, perched low and flicked her tail and called. Again she made a few false sallies out, then dove for the moss and disappeared; and then out she came, from another cluster of those pointed blades. This time I did walk up and peek inside: three eggs, off-white, with auburn dots.



They were Edenic, no doubt about it, both of these mossy sites, shady but open and inviting, simple, idyllic as a childhood lawn. There was no understory, no distracting muss or fuss or incongruity, no unnecessary color or detail—just the gray of trees and the green of moss rolled out beneath, so fresh and plush it seemed a shame to walk on it. The only other plants upon this perfect moss were the false Solomon's seals, with their squeaky-clean green blades, and the odd lady's slipper or sprig of Labrador tea. Even in his dreams, a person would be hard put to find a neater, cleaner paradise.

Later in the season, from a blind set up near one of these two nests, I had the chance to enjoy this personality myself, firsthand. And Cottrille was not kidding: the two birds were if anything "communicative," she with her pretty *p'wee* and he his abrupt *k'lick*, which had an oddly airy, empty quality when heard close; but then he, too, sometimes answered with the gentle *p'wee.* But there was more to the vocabulary, including a perturbed raspy chatter given on the wing when one bird or the other was giving chase; and a mellow toadlike trill emitted only from inside the nest, and only by the female, I think, when tending young. One other entry for the lexicon: a weak *ka-bee'*, just barely audible, given by one bird or other near the nest.

They were playful, too, often racing about together at terrific speed and spinning in split-second curlicues that the eye could hardly follow. And when I was set up with the camera, near the nest, they gave a boffo show not only of their acrobatics on the wing but their adaptive wit besides. Initially, whenever a bird arrived at the nest with food it would land beside it, on a leaf of the false Solomon's seal. But soon, in a tactic adopted to avoid the bright light of the flash, I think, they changed their game and skipped this protocol entirely, flying in directly through the curtain of green blades. And they did this with the most amazing fluency, and with such celerity that I could hardly see it happen. I'd hear the wing-drum of a bird arriving, then look out to see it vanish with a blur, like mist down a drain—a remarkable feat when you consider that only inches beyond that curtain lay a very definite dead end, and a dead end full of their own breathing babies.

No doubt about it, they really are one of the best kept secrets of the natural world, these unassuming birds of bogs. Playful, personable, agile in the air and uncompromising in their chosen Eden home, they have it all, everything you'd want in a small, personifying package. One man had known it for some time, of course, and he had spelled it all out quite nicely to this willing listener. But you need to see it for yourself; you need to be out there with them in their mossy Edens. You need to be there: the man from Michigan would have told you that, as well. ■

"Initially, whenever a bird arrived at the nest with food, it would land beside it on a leaf. Soon they skipped this protocol entirely, flying directly through the curtain of green blades."

William Burt is an author and photographer based in Old Lyme, Connecticut. This article is adapted from an essay in his latest book, Rare and Elusive Birds of North America. *W. Powell Cottrille passed away on December 17, 2001, not long after the above book was published. He had read this essay.*

WITH A WING AND A PRAYER

Text and Photographs by Bobby Harrison

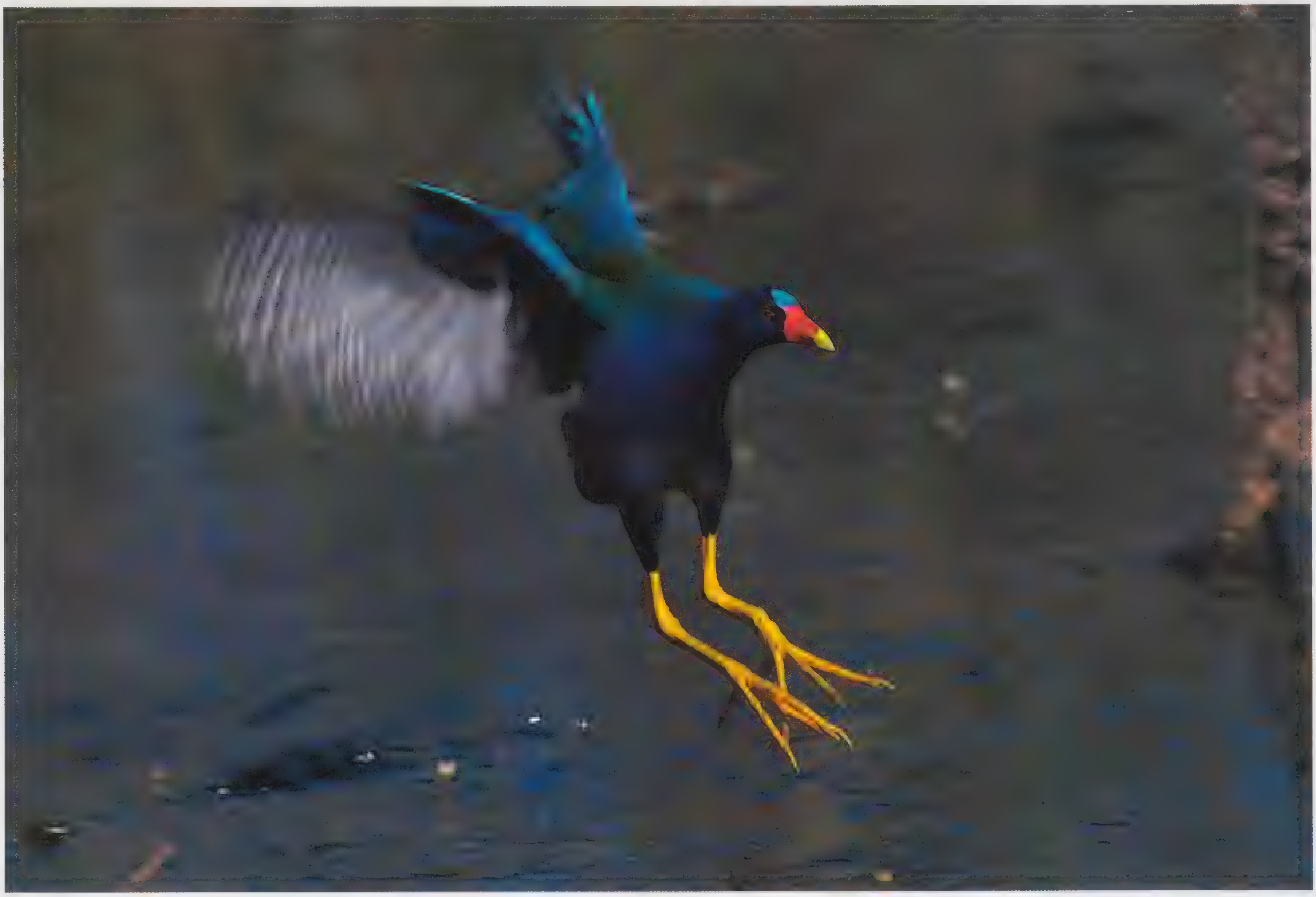
Mastering the art of photographing flying birds

Birds are one of the most popular subjects in nature photography. It's easy to understand why. Birds have inspired humans since we first started painting their images on the walls of Paleolithic caves. Surely the power of flight, more than any other quality that they possess, has fueled our fascination with birds throughout the ages.

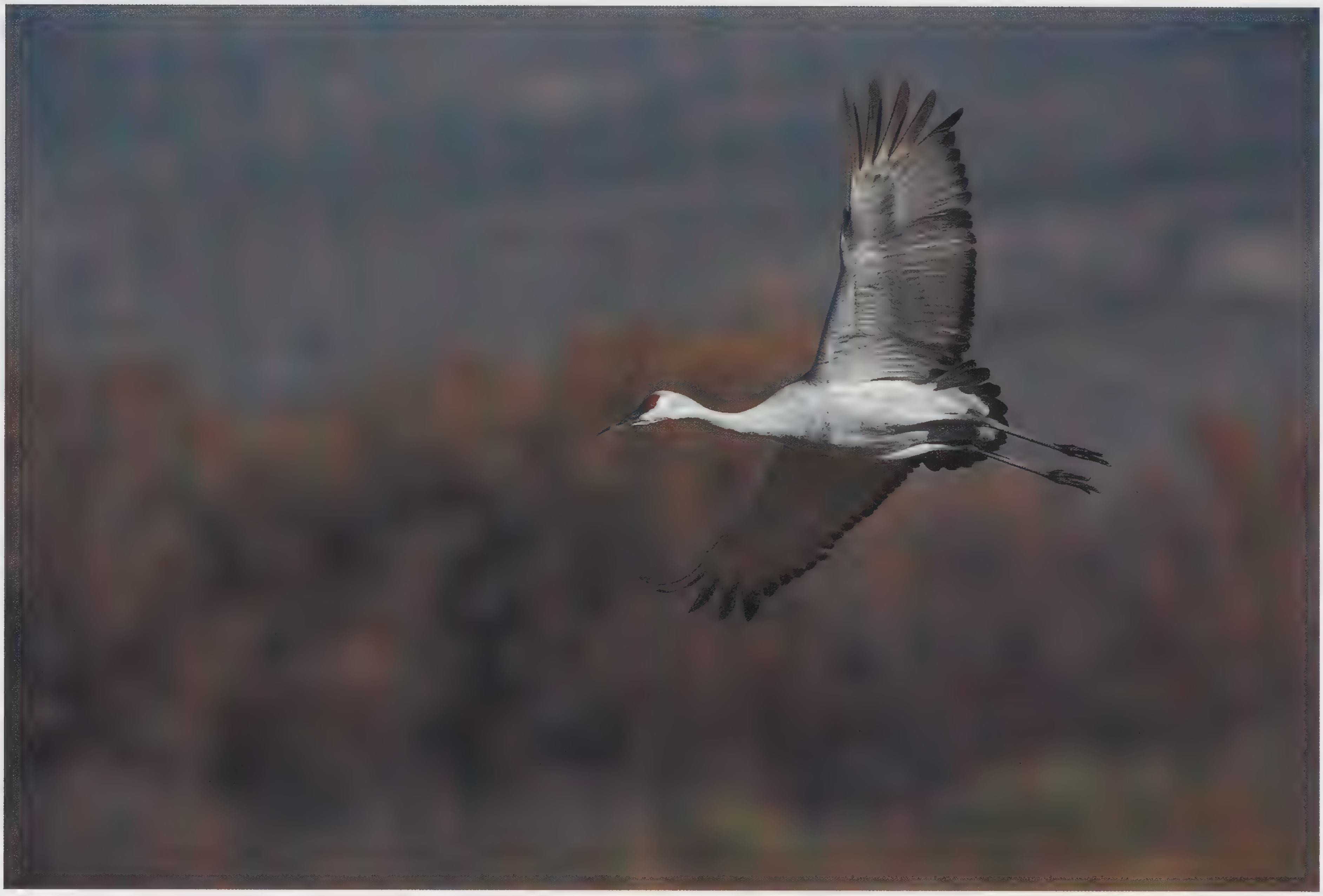
Although capturing birds in flight is probably the most challenging form of bird photography, learning a few simple techniques can vastly improve your flight images. As in all types of bird photography, having the right equipment can mean the difference between success and failure. During the past decade, advances in autofocus and vibration-reduction technology have made it easier than ever for photographers to capture sharp images of flying birds.

Choosing a camera

Important functions to look for in an autofocus camera include track focusing, dynamic or multisensor focusing, matrix metering, and a motordrive or autowinder that allows you to shoot at least six frames per second. Track focusing is a vital function for photographing birds in flight—it locks onto a moving subject, detects its direction and speed, anticipates where the subject's new position will be, and keeps it in perpetual focus. Of course the camera's focus selector switch must be set in the continuous servo mode for track focusing to work. Perhaps



A Purple Gallinule lowers its legs and prepares to land. Photographers take many excellent flight shots of birds as they are taking off or landing.



As you lock onto a bird such as this Sandhill Crane and pan horizontally in the direction of its flight, be sure to leave more empty space in front of than behind the bird.

more than any other, this bit of technology has increased the number of sharply focused flight images a photographer gets per roll of film.

Dynamic focus is also essential. This function activates all the focusing sensors in the viewfinder, one having been preselected by the photographer as the prime sensor. Once the prime sensor locks on the flying bird, the correct focus is maintained, even if the primary sensor slips off the subject. In dynamic focus mode, the secondary sensors keep the camera focused on the bird as it flies toward you, unless the subject moves completely out of your viewfinder. A great feature of dynamic focus is that once you get the bird in focus, you can frame it anywhere you want in the viewfinder. You don't have to keep the subject dead center to keep it in focus. Being able to frame the bird to the left or right in the viewfinder with empty space in front of it allows you to create a compositionally sound image—one that doesn't look like the bird is about to crash into the side of the picture.

Motordrive

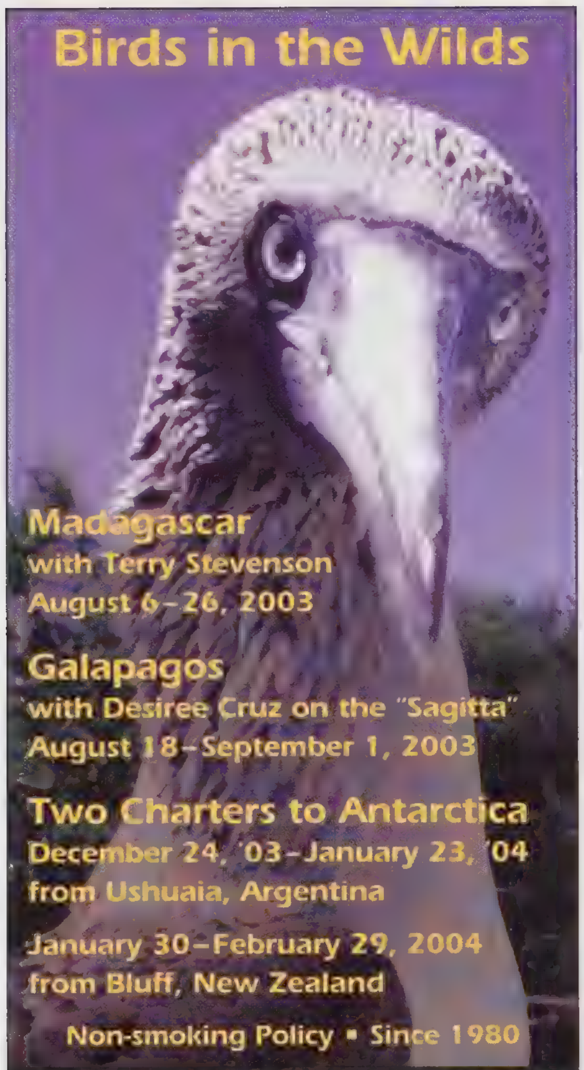
Shooting multiple frames per second is critical for great flight photographs, and the more frames you shoot, the better. Why? Wing position is everything with birds in flight. Your images may be sharp and perfectly framed, but if the wing is too high, too low, or casts a shadow on the bird's head, the image is less effective. Using a motordrive and shooting at multiple frames per second increases the odds of getting an image with wings in the perfect position, capturing peak action.

Shooting with a high-speed motordrive will significantly increase the amount of film you use, but that's what it takes to get the best flight images. Film is cheap compared with the cost of buying camera equipment or traveling to an exotic location. Shooting a few more rolls of film improves your chances of getting that great shot with little added cost.

Lenses

Telephotos in the 300mm to 400mm range are the best overall lenses for flight photography. This range provides frame-filling images of large birds with extended wings. I prefer using a 300mm as a basic lens and add a 1.4x teleconverter if I need more magnification. When selecting a lens, be sure it has a limited focus range switch, which keeps the lens from having to search back and forth from infinity to its minimal focus distance if the autofocus sensors slip off the subject. Focusing all the way to one extreme or the other wastes vital time as the sensors attempt to lock on the subject again. Limiting the focus distance to between 5 and 10 meters, or 10 meters to infinity, reduces the amount of time the lens needs to focus or refocus on the bird. For larger birds

Birds in the Wilds



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Terns will often hang right overhead in the wind, as they hunt for small fish, making it difficult to use a tripod. In this situation a gunstock mount and a vibration reduction lens make a good combination for successful photography.

such as cranes, herons, raptors, swans, and geese, the 10-meters-to-infinity range works best; for most waterfowl and small birds, the 5-to-10-meters range is better.

Vibration reduction or image stabilization lenses are becoming increasingly popular with bird photographers—particularly those who enjoy taking flight shots. Using these lenses, you can achieve a level of crispness in your pictures that would require a shutter speed three stops faster with a non-vibration-reduction lens. Built-in floating lens elements compensate for your movements and maintain as steady an image as possible without a tripod. These lenses also usually have an automatic sensor that detects when the lens is panning and compensates for the motion.

Camera mounts

I take a lot of flying bird images with my camera mounted on a tripod, because I happen to be shooting other subjects when a bird flies past. I use a ball head, which makes swinging the lens toward the passing subject quick and easy. If you plan on doing most of your flight photography with a tripod, a Wimberley head is an even better choice. The Wimberley head is like an altazimuth mount with the lens balanced on the vertical tilt. It allows you to make smooth horizontal and vertical sweeps with little effort, while keeping the lens perfectly balanced.

Some photographs are nearly impossible to take from a tripod. You can often photograph terns and gulls hanging in the air almost directly overhead—a situation in which a tripod will only inhibit your range of movement and speed. The camera can be handheld for these types of shots, and also when you're shooting down on flying birds from atop a cliff.

Another option for this kind of photography is a gunstock mount. Holding a camera and lens like a rifle keeps everything steady while allowing you a degree of movement unattainable with a tripod—provided that you take a firm stance and hold the gunstock tightly against your shoulder. I also attach a strap to the lens and loop it around my upper arm. I make the strap tight so that when my upper arm and elbow are placed against my body, it strengthens my upper forearm, which acts as a brace. I have never seen a commercial gunstock mount that I particularly like. Mine was custom-made by a friend and fits me perfectly. But regardless of whether you buy or make a gunstock mount, it should have a comfortable feel and a trigger to activate the autofocus and shutter release. With an autofocus lens and automatic-exposure camera, basically all you have to worry about is pointing the lens, composing the picture, and shooting. If you combine a gunstock mount with a vibration-reduction lens, you'll have a powerful tool for photographing birds in flight without a tripod.

Determining the correct exposure

Trying to set your f/stop and shutter speed as a bird flies toward you is a good way to lose a flight shot. For that reason I suggest using matrix metering set in shutter-priority, au-

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toexposure mode. Shutter priority allows you to preset a fast shutter speed to freeze wing motion or a slower shutter speed to blur wing movement; at the same time an aperture is automatically selected to render a proper exposure. When you choose a fast shutter speed, a correspondingly larger aperture is selected and depth of field (the area in sharp focus) is sacrificed. (Remember, the lower your f/stop number, the larger your camera's aperture will be and the shallower the depth of field.) On the plus side, however, having less depth of field often renders distracting background elements pleasingly out of focus and puts more emphasis on your subject. Compositionally, this is called selective focus. If you choose a slower shutter speed, your camera automatically selects a correspondingly smaller aperture setting. Depth of field increases, but so does the possibility of getting a blurry image due to camera shake and subject movement.

It is important to note that matrix metering works great most of the time. But be aware that no metering system will properly expose white or black subjects unless you override your light meter to compensate. (See "White Birds . . . Exposed"; Spring 2002). White clouds and other light areas in the sky may also affect the accuracy of your camera's exposure metering and require exposure compensation.

Technique

Cameras, lenses, motordrives, and mounting systems are important, but technique is what makes it possible to use all that technology to its fullest potential.

For a beginner, one of the most difficult aspects of flight photography is sighting the bird in the viewfinder and keeping it there. A technique that works well for me is to prefocus my lens at the distance I expect to pick up the flying bird in my viewfinder. That distance will vary with the speed at which the bird is flying, but about 300 to 350 feet is a good average focus distance. To accomplish this, prefocus on the ground or another object at the given distance, then choose a flying bird to photograph and sight it in the viewfinder. Sighting on the bird while it is farther away makes it easier to pick up in your viewfinder. As the bird flies toward your camera, it will begin to come into focus. When the image appears almost sharp, depress the shutter release halfway. The track focus sensor will activate and lock onto the flying bird, bringing it into and keeping it in focus as it continues to fly toward you. Although it sounds like a considerable amount of time passes when you use this technique, be forewarned: the whole thing takes place in a matter of seconds.

The technique for keeping flying birds in the viewfinder is called panning. You pick up the bird in your viewfinder and simply follow it in a horizontal plane, sweeping the lens along smoothly in the direction the bird is flying. This is where dynamic and track focusing become most effective, keeping the bird in constant focus as you pan. When you begin shooting, gently squeeze the shutter release, keeping the lens steady and avoiding jerky motions, and continue panning until you finish the sequence.

Panning works because it achieves a relative speed of zero between the camera lens and the subject. Panning with a fast shutter speed freezes the subject as well as the background. A slow shutter speed blurs the wings and background while most of the bird's body remains sharp. For most large birds, shutter speeds of 1/250 of a second or faster freeze wing motion. Slower shutter speeds will cause wing blurring in your images, but blurred wings are not a bad thing in flight photography. The blurring effect shows movement and action, lending visual support to the feeling of flight. Don't be afraid to experiment with slow shutter speeds while panning. Some of the most creative and artistic bird images are made in this way.

Many excellent images of flying birds are made as they take off or land. Waterfowl, herons, egrets, cranes, birds of prey, shorebirds, and seabirds generally fly into the wind when they're first becoming airborne and when they're descending to land. Although taking pictures at this time usually requires panning with your camera, the birds are moving much slower and more predictably than usual, and they are easier to follow.

Having knowledge of your subject is important in any type of photography, but with birds it is essential. If you always observe birds closely and learn as much as possible about their behavior, you'll develop an almost intuitive sense of when a bird is going to fly. Before a bird takes flight, it often stands very alert, turning its head in many different directions, checking out its surroundings. It also turns into the wind. But most important, right before they fly, birds often defecate, perhaps to lighten their load. Being aware of these simple clues, you'll be ready for action when they take off. Be sure to place the bird in the lower left or right side of the viewfinder, leaving space for the bird to jump into the frame as it takes flight. Because birds land into the wind, make sure the wind is at your back or at a right angle as you shoot. If the wind is blowing in your face, all you'll photograph is the backs of birds.

Where can you go to find flying birds to photograph? You should be prepared anytime you're taking pictures in the field, but your best opportunities will come in places where birds are flying to or from their feeding grounds. At rookeries you can take pictures of birds flying near their nests. At seabird cliffs, you can photograph birds soaring on updrafts. Staging areas along migratory routes are great places to find cranes, waterfowl, and shorebirds to photograph. Also check out local city ponds and lakes. Waterfowl frequent these locations, flying to them in the morning and leaving in the evening like clockwork.

These are a few basic tips and techniques that will help you improve your flight photography. As you work in the field, you will customize these techniques to fit your own unique style of shooting. So load up the gear, take lots of film, and with luck and hard work you'll get some great images of flying birds. ■

Bobby Harrison is an associate professor of art and photography at Oakwood College in Huntsville, Alabama, and a well-known bird photographer. Visit his web site at <www.bobbyharrison.com>.

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ANNOUNCING CERTIBIRD

by Pete Dunne

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LIVING BIRD

SUMMER 2003 VOLUME 22 NUMBER 3

GREETINGS FROM SAPSUCKER WOODS

The field of nature photography is in the midst of a great transition, moving from conventional film to a digital medium. But as photographers ponder whether to invest in digital cameras and editors debate whether to publish digital images in their magazines, one question looms large above all others: Do digital images reproduce as well in print as film images?

I don't have the definitive answer yet, but this is something I've become increasingly concerned about. At *Living Bird,* we pride ourselves on the high reproduction quality of the photographs we publish.

Of course, we've already published a number of digital pictures in *Living Bird,* most notably those used with Kevin McGowan's Autumn 2001 Picture Perfect column ("Snap Judgments"), which showed readers how to photograph birds using a spotting scope and a pocket digital camera. But these pictures were printed small—barely larger than snapshots. How well do digital images turn out when they're blown up to full-page size or larger?

When I heard that Arthur Morris had switched completely to digital photography, I thought, here's my chance to find out how well high-resolution digital images taken with state-of-the-art equipment by one of the world's top bird photographers will reproduce in *Living Bird.* So I asked him if he would write an article for us and supply some new digital bird images.

As I write this, I don't know how this experiment will turn out. I'll let you be the judge. You can view the results in the Brown Pelican image at right and in the article beginning on page 24. I'd appreciate hearing your comments, pro and con, about how well these images stack up against the others in this issue, in terms of sharpness, color, and vibrancy.

Tim Gallagher
Editor-in-Chief

Cover: A Least Sandpiper in full breeding plumage sits atop a tundra snag near Churchill, Manitoba. Photograph by Cliff Beittel.

Right: Was this vivid portrait of a Brown Pelican in flight taken with conventional film or with a digital camera? Answer: It's a digital image. See article on page 24. Photograph by Arthur Morris/Birds as Art.

Back Cover: A Brown-crested Flycatcher returns to his branch after hawking a meal in midair in South Texas. Photograph by Greg W. Lasley/KAC Productions.

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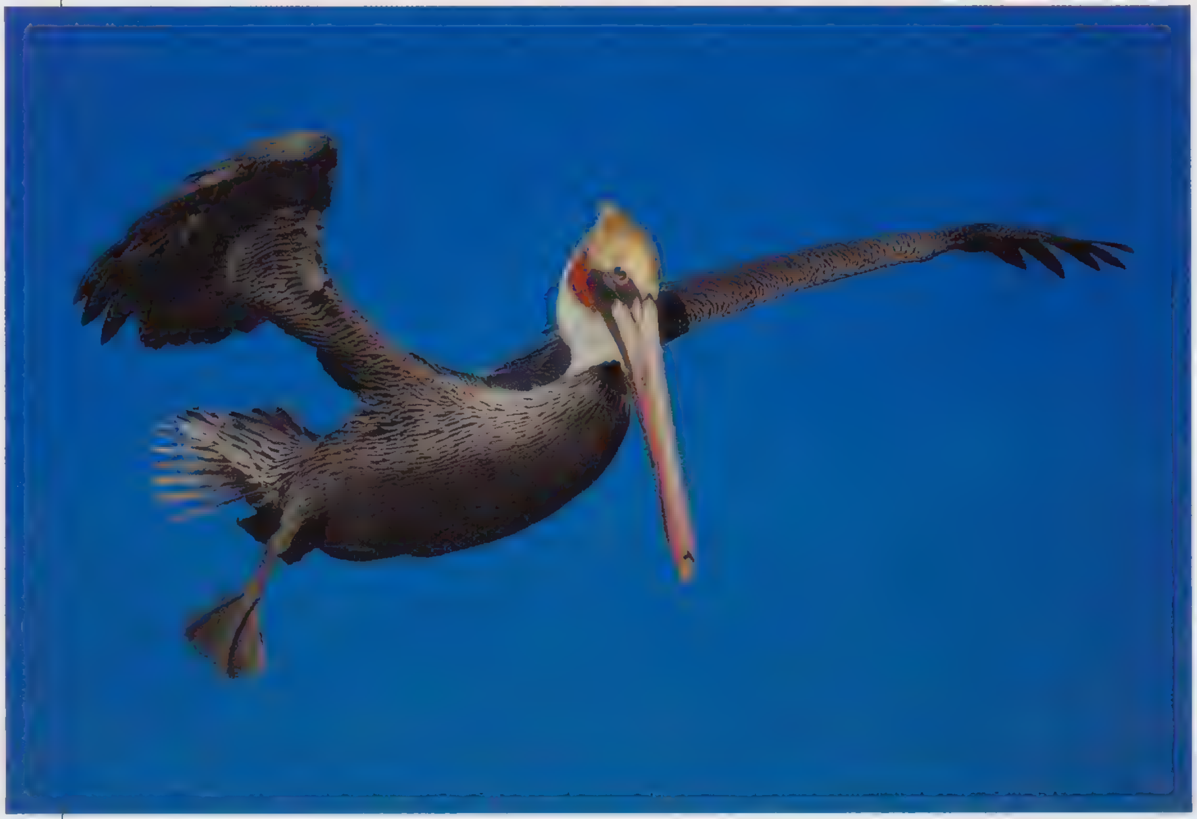

LIVING BIRD
SUMMER 2003 VOLUME 22 NUMBER 3

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Letters

MS. GOOD BIRDER

I would like to thank Pete Dunne for his essay, "Looking for Mr. Good Birder," in your Winter 2003 issue. As a rank beginner, I have been somewhat intimidated by the talk of life lists and overseas bird-watching expeditions. However, I recently spent three half-hour sessions teaching the children in my son's second-grade class the names and songs of 12 common local birds. By the end, the children were bringing in stories of birds they had seen, and they were very interested in the efforts of the Los Angeles Zoo to save the California Condor from extinction. Now, 12 birds is a significant portion of my life list (I am like one of those people he mentioned on the lakeshore trying to identify coots with a field guide), but Pete Dunne convinced me that I am, in some small way, a "good birder," and I thank him for it.

Kathy Igo
Los Angeles, California

A BONY TREASURE

I was Tom Gilliard's assistant from 1959 until his death in 1965, so it was a great surprise and thrill to see the reprint of his 1961 essay on his trip with Sam George to Funk Island for Great Auk bones ("The Bony Treasure of Funk Island," Winter 2003). I also have had a letter from Tom's widow, Margaret Gilliard Person, who was equally pleased to see it.

Because the Funk Island trip was considered a "boys' lark" by Frank Chapman and was not sponsored by the American Museum of Natural History (AMNH), the bones were the personal property of Tom and Sam. The unarticulated bones were donated to the museum, but the articulated specimen remained the personal property of Tom, left in his will to Sam. We borrowed it from Sam in 1983 to display in an exhibit on the Great Auk, held in conjunction with the Centennial Meeting of the American Ornithologists' Union in New York City. When Sam passed away, his widow, Margaret George, donated the mount to AMNH. I traveled to South Carolina in 1993 to bring this skeleton back. Passing through airline x-ray machines with a mounted skeleton was an adventure in itself!

Mary LeCroy
Department of Ornithology
American Museum of Natural History
New York, New York

PROOF POSITIVE

The long-awaited CertiBird program is finally here (The Catbird Seat, Spring 2003)! At long last, I can now obtain legitimacy for my Passenger Pigeon sighting and for the report I made of seeing a Great Auk swimming around in my hot tub.

My only concern is Pinocchio being on the support staff. His nose shall surely grow too long for his equilibrium to carry. For health reasons, perhaps he should stick to certifying only those sightings that the records committees have already accepted.

I'm also considering reporting the Carolina Parakeet that keeps chirping so loudly outside my window. Whenever I try to photograph it, the bird vanishes, ghostlike, into thin air. Maybe it could use one of those certificates!

Thanks for announcing this useful new program, providing us dreamers with bonafide proof.

Jan Renfrow
St. Maries, Idaho

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send email to <livingbird@cornell.edu>.

A Man with a Mission

When nature photographer Subhankar Banerjee first set foot in the Arctic National Wildlife Refuge (ANWR) on March 19, 2001, the temperature hovered around minus-40 degrees Fahrenheit and a stiff, 30-knot wind blew against him. This would have been tough on any newcomer to the North, but for Banerjee—who was born in India and grew up in the sweltering heat of Calcutta—this was an almost unimaginable level of cold.

Since emigrating to the United States in the 1990s and completing a master's degree in computer science, Banerjee had launched a promising career, working for several years at the Los Alamos National Lab in New Mexico and later at Boeing in Seattle. But then he decided to turn his avocation of nature photography into a life career. He was already a dedicated conservationist and hoped to work full-time on behalf of the environment. One thing that particularly disturbed him was the imminent threat of oil drilling at ANWR.

According to some, ANWR is a frozen wasteland, covered with snow and ice for much of the year, with a wealth of crude oil beneath it. But to others it is America's Serengeti, encompassing 19.8 million acres of pristine land in northeastern Alaska, containing a wealth of wildlife ranging from shorebirds, Snowy Owls, falcons, and arctic waterfowl to polar bears, musk oxen, wolves, and arctic foxes. Banerjee was determined to document the beauty and biodiversity of ANWR, through all four seasons, with his camera.

COURTESY THE MOUNTAINEERS BOOKS

Subhankar Banerjee spent 14 months documenting the beauty and biodiversity of the Arctic National Wildlife Refuge.

Banerjee spent more than 14 months in the wilderness, sometimes holed up in his tent for days during blizzards. It was the most difficult time in his life, but also the most enriching. He had the rare experience of seeing a mother polar bear playing with her cubs outside their winter den and of watching Buff-breasted Sandpipers perform their courtship ritual. He accompanied Inupiat Eskimos and Gwich'in Athabascans on their subsistence hunts, living with them for weeks at a time. He traveled more than 4,000 miles in ANWR, on foot, by raft or kayak, and by snowmobile, in all seasons and in all extremes of weather.

Last year, The Mountaineers Books published a book of Banerjee's photographs titled *Arctic National Wildlife Refuge: Seasons of Life and Land,* featuring essays by Peter Matthiessen, George B. Schaller, William H. Meadows, Fran Mauer, Debbie S. Miller, and David Allen Sibley, a poem by Terry Tempest Williams, and a foreword by former President and Nobel Laureate Jimmy Carter. And the Smithsonian Institution is currently showing 45 of his ANWR images in an exhibition of his work.

But Banerjee's proudest moment must surely have come on March 19, 2003, as the U.S. Senate debated whether to open up the refuge to oil drilling. Barbara Boxer held up Banerjee's book and said, "I wish every member could have the chance to take at look at this beautiful book. It is a photographic journey by this incredible photographer through all seasons. I know my colleagues cannot see this, but it shows the birds and the snow and all the rest. It is quite beautiful." She implored the senators to keep the refuge wild. Later that day, the Senate voted 52 to 48 to prohibit oil drilling in the refuge.

With a vote that close, Banerjee's efforts clearly are not over. "The fight over the Arctic Refuge will not be over until Congress grants permanent wilderness designation to the coastal plain of the refuge and safeguards this magnificent place for our future generations," he says.

For a list of Banerjee's upcoming speaking engagements, visit The Mountaineers Books web site at <www.mountaineersbooks.org/mtn_ANWR. cfm#Appearances>. His exhibition, "Seasons of Life and Land," is on display at the Smithsonian's National Museum of Natural History through September 2, 2003.

—Tim Gallagher

RETURN OF THE SWALLOWTAILS

by Mel White

After more than a century's absence, Swallow-tailed Kites may once again be nesting in Arkansas

They say the St. Charles Community Store has the best catfish in Arkansas County, and that takes some doing. Right along the east side of town runs the lazy ol' White River, home of the real deal, the true bottom-feeding, mud-sucking channel cats and blues, big as your leg and way tastier than the pond-raised things that eat Purina Catfish Chow or some such pelletized pablum.

People in these parts know catfish. You can tell they like the kind served here, too, by the pickups and cars and vans crowding the parking lot early on a Friday evening.

In the back of the store, between the beer cooler and the rack of Cheetos and Doritos, eight people crowd around a table, digging into heaps of fish, hushpuppies, slaw, beans, potato salad, cantaloupes, tomatoes, and red onions. They don't look any different from the other folks who have filled their plates at the counter, but the talk at this table isn't about farm prices or high-school graduation.

Taped to the checkout stand at the front of the store is a wanted poster. Instead of a thuggish face, though, there's a picture of a bird, and a description: 4-foot wingspan, bold black-and-white pattern, deeply forked black tail. Big letters proclaim "$500 REWARD for nest location."

The people at the table by the Old Milwaukee Light know a secret.

"We have permanently deafened a helicopter pilot," one woman says. Another laughs and adds, "I mean, we were screamin'."

You drive to White River National Wildlife Refuge through fields of golden winter wheat and new green rice and bare soil ready for soybeans. Just when you've had about enough of this, the skinny road curves a little and dips, and you're in a new world. Oaks, sycamores, and bald-cypresses tower overhead. Stop the car and the songs come at you in an endless jumble: Eastern Wood-Pewee, White-breasted Nuthatch, White-eyed Vireo, Yellow-billed Cuckoo, Wood Thrush, Summer Tanager, Northern Parula, Great Crested Flycatcher, Tufted Titmouse. And Prothonotary Warbler. Lots and lots of Prothonotary Warblers.

The White River refuge covers 160,000 acres of bottomland hardwoods in eastern Arkansas, stretching for 90 miles along the eponymous waterway and its intricately interconnected bayous. It's a relic of what the Mississippi alluvial plain used to be, before levees and drainage projects—back when a quarter of Arkansas was known as "the Great Swamp." Black bears found a sanctuary here when they'd been extirpated from the rest of Arkansas. When the Bald Eagle began breeding in the state after an absence of 30 years, this is where the first nest was built.

Swallow-tailed Kites no doubt nested here, too, a century ago, when they were found all the way north to Minnesota. But none has been confirmed nesting in Arkansas since perhaps 1900. The great floodplains that supported them have disappeared, mostly. There have been scattered reports of strays, birds that wandered up from their shrunken range along the Gulf Coast—but they were just accidents of weather, or birdbrain confusion.

And then one day in 1998, a man who lives near the White River happened to run into Karen Rowe of the Arkansas Game and Fish Commission, and he had a question.

"What's the real name of those forkéd-tailed hawks we've been seeing?" he asked.

Rowe pretty soon realized that the man not only was describing a recent sighting of Swallow-tailed Kites, he was claiming that people had been seeing them for years along the western boundary of the White River refuge.

The idea that kites could have been at the refuge unbeknownst to wildlife officials isn't so far-fetched—not when you consider that, when word of the sightings got around, quite a few serious birders spent quite a bit of time looking for them with no success. The only people who saw swallowtails in the next couple of years were those who spent long hours in the area, day after day: refuge personnel, Game and Fish and Army Corps of Engineers workers, and the like. The refuge is huge and mostly roadless, and the roads that do exist are under water from midwinter until April or May, or even later. Vast parts of it are seldom visited by anyone but anglers who know the routes through the confusing maze of bayous.

Still, eight sightings in 2000 (from April through June) encouraged Rowe, a nongame biologist, to believe that Swallow-tailed Kites might actually have returned to Arkansas not just as vagrants, but as breeders. As a result, the Game and Fish Commission provided money to study the species' status, and eventually offered a reward for the first person to locate a nest.

Which explains why on a May day in 2002, a woman named Amy St. Pierre is putting a flatbed boat into La Grue

Bayou, a tree-lined White River tributary at the western edge of the refuge. A graduate student at Arkansas State University in Jonesboro, she moved from Connecticut the previous year to work with Dr. James Bednarz on kites, both the swallowtail and its plainer and far more common relative, the Mississippi Kite. Aided by research assistant Renee Solick, St. Pierre loads optics, cameras, notebooks, and other supplies, and the two women head upstream.

"Being in a lab just doesn't do much for me," St. Pierre says. She cranks the handle on the 25-horse Mercury outboard and zooms past black willows and bitter pecans in endless walls of new spring green. A Red-shouldered Hawk flies overhead, carrying a lizard in its beak, and clouds of hackberry emperor butterflies boil up as the boat passes. "I saw this project advertised on a web site, and it sounded interesting. I had never worked with raptors, and I'd never been to the South.

"I didn't know much about Jim until I got here. Then I saw all the research he'd done on raptors and I thought, 'Wow, I'm really lucky.'" (Bednarz is the editor of the *Journal of Raptor Research* and has done significant work on, for instance, the Galápagos Hawk and the group hunting habits of the Harris's Hawk in the Southwest.)

St. Pierre stops the boat near a Mississippi Kite nest she and Solick had found earlier, high in a water oak along the bayou. No birds seem to be around.

"We haven't seen any copulation nearby," she says. "We don't know if they built that one and decided they didn't like it, or what. We really don't have a lot of data in Arkansas on nest sites or what they're eating, so maybe we can fill in some of the blanks. And what we find out about the Mississippi Kite might help with the swallowtails.

"Last year there was one nest with a third bird hanging around. There are reports of helpers at the nest. But who is this strange bird? Is it a sibling? We have one nest right now where the third bird is an immature. What is it doing? Is it just hanging around? Is it helping feed the young? Is it incubating? That's my goal, to figure out about the helpers."

A few minutes later, two kites show up, surprising St. Pierre. One seems to be an immature bird, with a banded tail. "Great!" she says. "Maybe all my nests will have helpers."

Farther up the bayou, she throttles back the boat near another nest, on property that belongs to a hunting club. "We're trying to get permission to enter here, but the place has multiple property owners and they all have to agree," she says.

The boat turns west into Essex Bayou, and then sharply south into Prairie Bayou, narrower and more convoluted than the others. The water on the White River refuge is high this spring, higher than it's been in years. In places there's no dry land for miles. The great forest stands flooded in a sea of brown river water, like the seasonal *varzea* of Amazonia. Willows overhang the bayou, and several times rafts of floating logs force St. Pierre to detour into the woodland, searching for a route around the obstruction.

Suddenly a Mississippi Kite appears—so close!—and banks right overhead, fast. It tries for a dragonfly in a quick dive, and misses.

And then: "Look! They're doing it!" St. Pierre shouts, cutting the motor. A female Mississippi Kite perches on the tip of a vertical dead willow limb over the bayou. The male flaps his wings rapidly to maintain his balance on her back for about 10 seconds and then flies off, returning in a couple of minutes with a dragonfly. He lands a foot from the female, who tilts her head down and her tail straight up. Shortly, the male flies away with the insect.

"I think on about four occasions we've seen the male fly in with something and the female take it," Renee Solick says. But on this occasion, for this female, once was apparently enough, and a gift wasn't going to change her mind.

At 11:20 A.M., St. Pierre and Solick have stopped the boat to look at a water snake. Solick calls out and points to the rear, where two birds soar high in the sky, so far away they're barely more than dots. How did she spot them? Through binoculars, white heads shine like beacons, and as one bird banks it spreads its long, twin-pointed tail. Forkéd-tailed hawk, indeed. The two women are jubilant, happily alternating between watching the pair and jotting notes in their journals. Even though they've been in the field for hours every day for weeks, this is only the thirteenth sighting of Swallow-tailed Kites for the season.

Too soon, the birds drift even farther away, out of vision, and St. Pierre motors east about a half-mile, to the

MEL WHITE

Amy St. Pierre (above) studies Swallow-tailed and Mississippi kites in the White River National Wildlife Refuge of Arkansas.

spot where most of the Swallow-tailed Kite sightings have occurred.

"The most exciting thing is that Jim Bednarz was here last week and saw a Swallow-tailed Kite carrying a stick," St. Pierre says. "In Louisiana, they're already incubating. You'd think we might be a couple of weeks behind, but not a whole month.

JOE McDONALD

"So many adjectives have prefaced the Swallow-tailed Kite's name, from extraordinary to exquisite, yet all seem inadequate in the presence of the living, flying creature."

"They need an emergent big tree, with nearby open areas for foraging. They use Spanish moss in their nests in lots of places, and we don't have that here. But we have other epiphytes—plus, they must have used something else back when they nested in Illinois and Minnesota."

At 12:50, Solick again spots distant birds to the west. Binoculars up: a swallowtail . . . no, two, with three Mississippi Kites, in a loose group soaring against a cloud spread raggedly across the brilliant blue sky. The swallowtails turn in parallel arcs, like a ballet, with breathtaking grace.

So many adjectives have prefaced this bird's name, from "extraordinary" to "exquisite," and yet all seem inadequate in the presence of the living, flying creature. It may be only the physics of grabbing dragonflies from the sky and plucking lizards from tree branches, but adaptation has led to beauty that seems almost profligate.

One Mississippi Kite half-heartedly dive-bombs a swallowtail, which does a neat roll to escape and then peels off effortlessly westward, staying in sight for less than a minute. The second swallowtail, too, has meanwhile disappeared. On another recent occasion, Renee Solick saw a Mississippi following a swallowtail, though it seemed to be merely trailing it, not harassing.

Coordinated flight is said to be courtship behavior for Swallow-tailed Kites. Are they nesting here, more than a century after the last documentation?

The catfish at the St. Charles store was tasty, but the people at the back table had other things on their minds. Jim Bednarz, Amy St. Pierre, and Karen Rowe were telling the others about a morning soon after Amy and Renee saw the mixed flock of kites over Prairie Bayou.

The three met at a small nearby airstrip at 6:45 A.M., climbed into a helicopter, and took off toward the White River refuge. At the stick was a state police pilot whose usual assignment was aerial searches for marijuana patches and crystal-meth labs.

The White River region encompasses the second-largest river-basin forest in the Mississippi Alluvial Plain—a fact that has greater significance from the air, perhaps, than on the page. As the team reached the refuge, the view of the green expanse was daunting. "That thing just goes on forever," Rowe said. "I thought, no way."

But there was a way. Following the twisting bayous below, the team approached the area where swallowtails had been seen most often, south of Prairie Bayou. Rowe spotted a pair flying, but, trying to keep their distance, the watchers lost them. Later, Bednarz looked down to see two swallowtails perched. When they flew, "it turned out one was actually on the nest," he said. "It was right where it should have been, in a tall Nuttall oak that stuck up over the rest of the canopy." There were no eggs inside.

"It was such a beautiful nest, like a perfect cup," St. Pierre said. "We took a few pictures, and then we said, 'Let's get the heck out of here.'

"We went back by boat later. It would have been a one-in-a-million chance to find that nest from below, even if we'd gone right up to it. There's only one angle, otherwise it's completely hidden by foliage."

The three were overjoyed, of course, but the nest discovery was hardly the end of the swallowtail search. The morning after the catfish dinner, 14 people scattered out around the White River refuge, in boats and on levees, to watch for swallowtails and possibly get a better idea of how many are in the area.

None was spotted, though, and as it turned out, no further breeding activity was observed at the nest, either. Were these young birds that were making their first (and seasonally late) attempt at breeding? Did predators affect the nesting? (St. Pierre and Solick have discovered a very high rate of predation-caused failure among Mississippi Kite nests on the refuge.) Will the swallowtails be back to try again? Is the species beginning a northward expansion in the Mississippi Valley after decades of absence?

Amy St. Pierre will be back in 2003, continuing her work on Mississippi and Swallow-tailed kites. "The project was funded for only two years," Karen Rowe said, "but I went before the Game and Fish Commission on bended knee and got funding for a third year."

And in case a fisherman gets lucky and looks up at the right time, or some birder wants to venture into the trackless White River swamps, the reward offer is still good. ■

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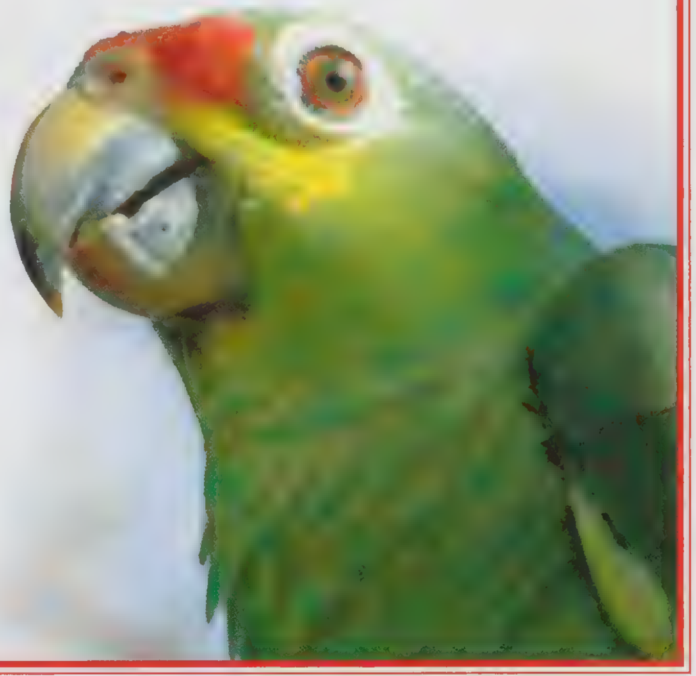

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In Search of Hawaii's Vanishing Birdlife

The Iiwi (above) belongs to a diverse group of Hawaiian Honeycreepers found only on the Hawaiian Archipelago.

An expedition to record the sights and sounds of this archipelago's rapidly declining native birds

BY MIYOKO CHU
PHOTOGRAPHS BY JACK JEFFREY

Seeing Tim Barksdale and Greg Budney board the airplane in Honolulu, you'd never guess that their ordinary suitcases held an unprecedented collection of dazzling bird specimens. Their expedition to Hawaii had yielded the bold red-and-black Iiwi with its curved pinkish bill, the fiery-orange Akepa, the tiny chestnut-colored Elepaio, the rare Akiapolaau with its chisel-and-probe bill, and every other bird species native to the Big Island. Barksdale and Budney were bringing these digital "specimens" to the Cornell Lab of Ornithology—clip after clip of sounds and video images of Hawaii's colorful birds flying, foraging, and singing in their natural habitats. Later, anyone opening the figurative drawer to the Lab's new multimedia museum could encounter an Akepa swooping down from the sky and singing in a display for its mate, or a pair of Iiwi chasing one another from tree to tree. Archived and

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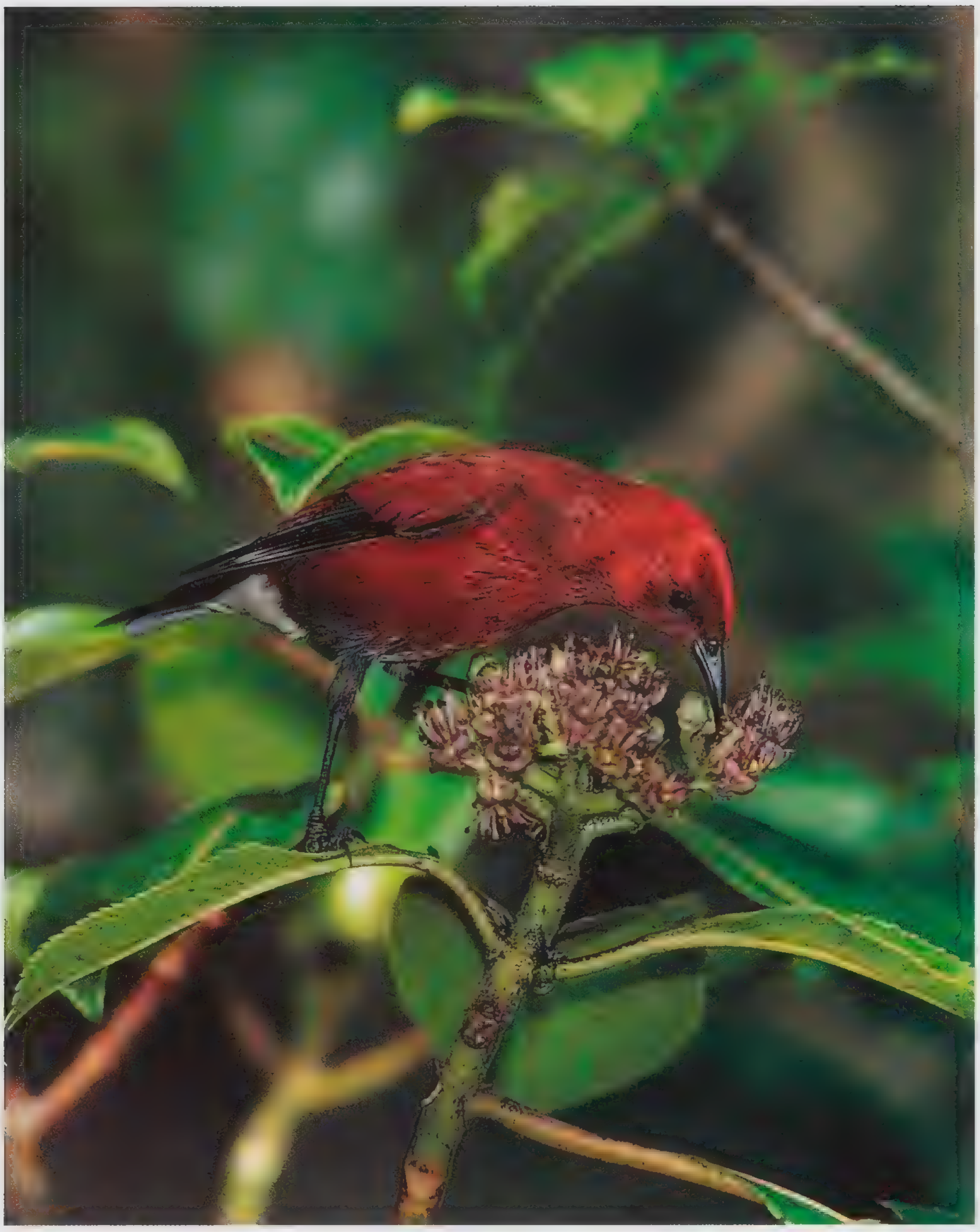
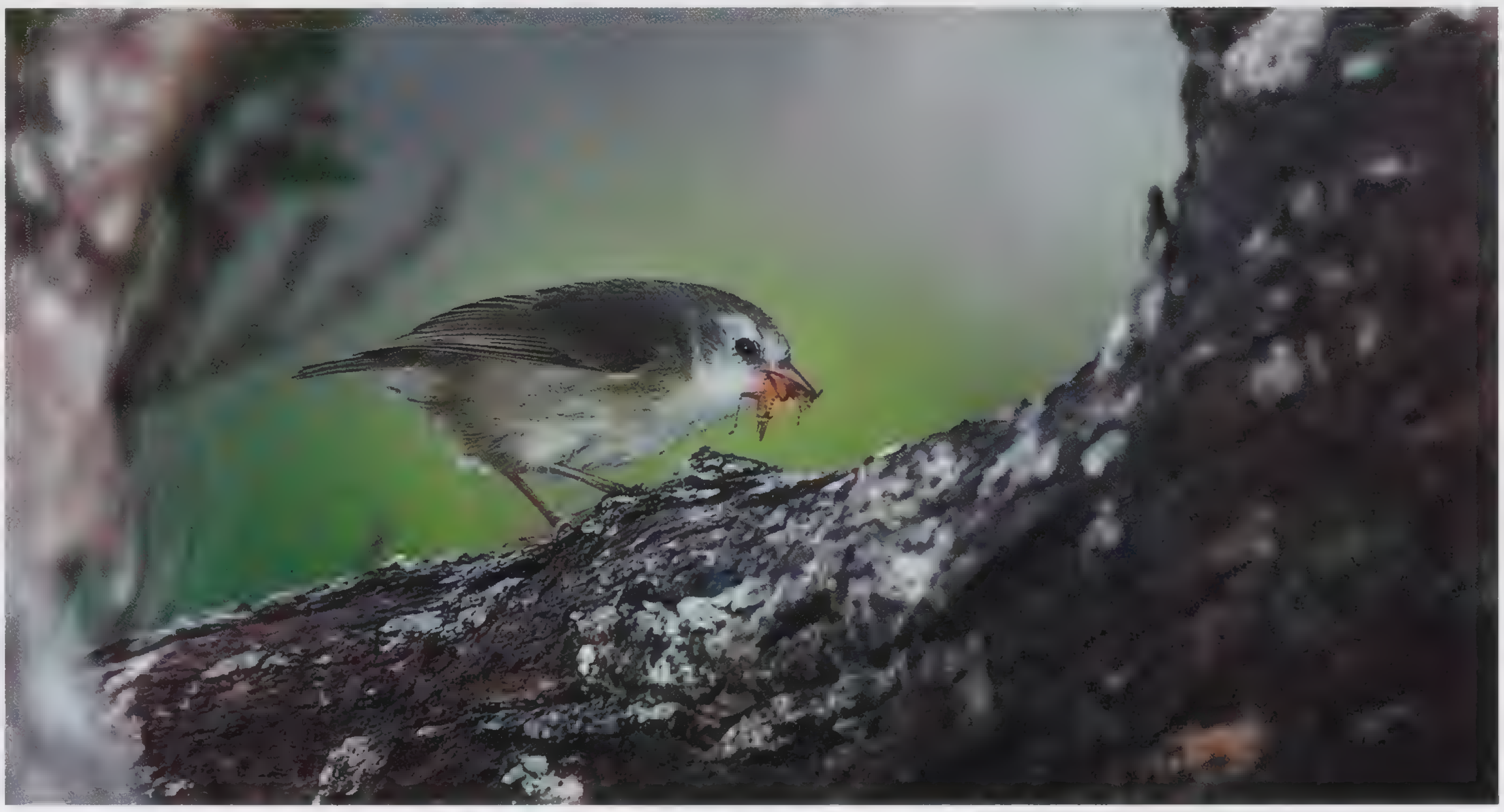


formatted for the Internet, these dynamic recordings will have tremendous potential for scientific study and for reaching tens of thousands of people around the world with sounds and images of Hawaii's birds.

The expedition to Hawaii was part of an ambitious new initiative at the Lab's Macaulay Library to acquire sound recordings and video footage of every bird species, starting with North America and Hawaii. Long known for its audio recordings of animals—with 160,000 cuts, the largest such collection in the world—the Macaulay Library is undergoing a transformation into a multimedia museum of animal behavior. Sound recordings, photographs, and video footage of birds and other animals will soon be distributed over the Internet for use by scientists, conservationists, educators, and the general public.

Last year, after acquiring two extensive video collections, the Macaulay Library had video footage of all but 120 of the bird species found in North America and Hawaii. Filling in these gaps has been a priority, as has building a more comprehensive collection that will include every subspecies and color morph, and all of their conspicuous behaviors. Hawaiian birds are at the top of the wish list, both because many of the native species have never been filmed before and because so many Hawaiian birds are imperiled. Of 93 native Hawaiian bird species, 17 have gone extinct in the last two centuries and 33 are threatened or endangered. The intelligent Alala, or Hawaiian Crow, was down to just two individuals in the wild when Barksdale and Budney launched their expedition last year.

"I had heard how desperate the situation is for Hawaii's native birds," says Barksdale, a professional videographer and Lab affiliate, "but I don't think I really understood how bad it was until I got there. I saw trees, flowers, and birds everywhere, yet none of them were native species. I searched for three days at the lower elevations without finding a native spe-



A finchlike ancestor colonized the Hawaiian Islands millions of years ago. As new generations began exploiting different kinds of foods, the birds diversified into some 50 kinds of Hawaiian honeycreepers with specialized bills. The Apapane (above) uses its long curved bill to reach nectar in flowers. The Kauai Creeper (right) uses its short bill to handle an insect in Kauai's isolated Alakai Swamp, the only place where this species can still be found.

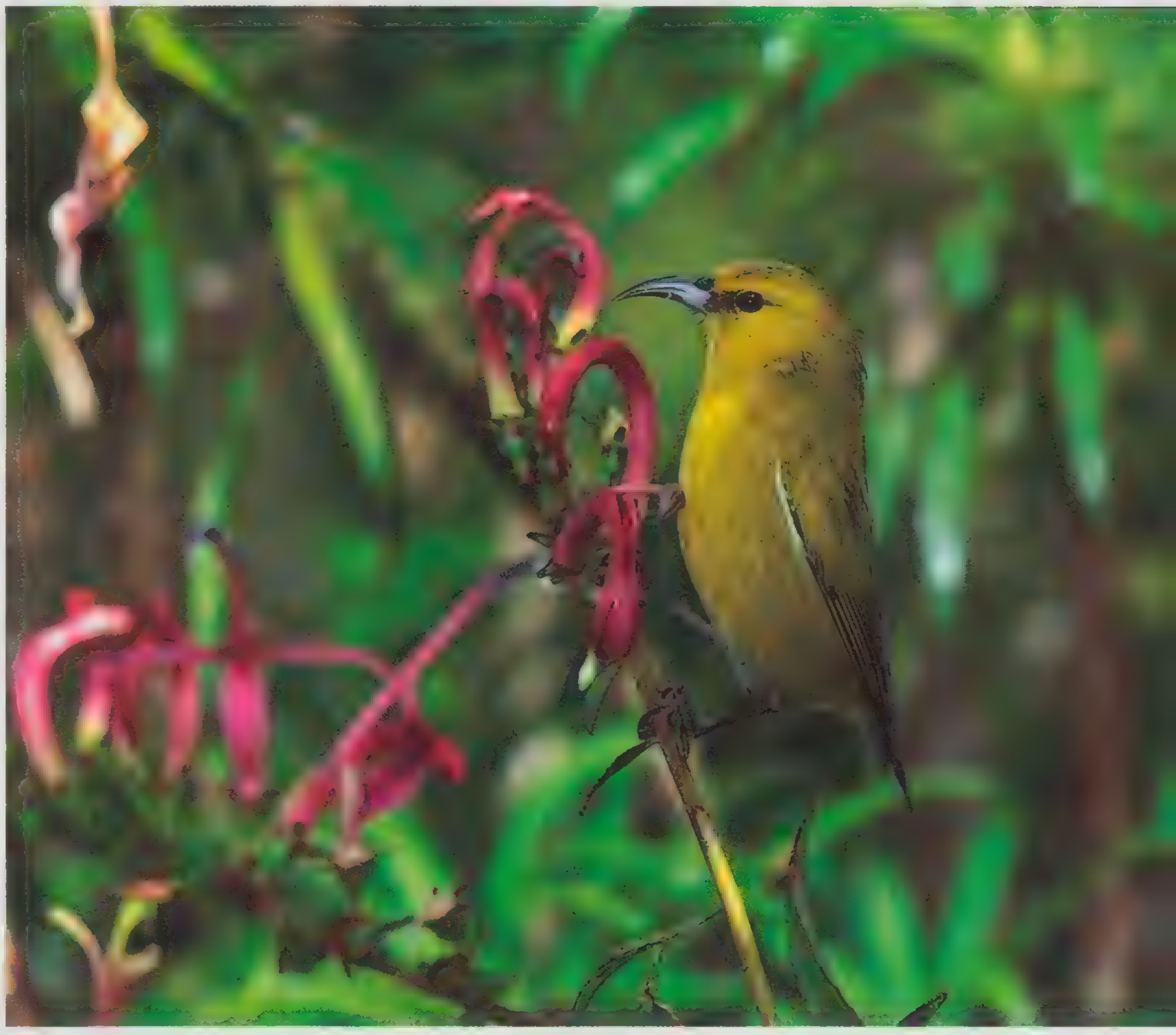
cies. By the fourth day I was thinking, Good heavens, this is a disaster area."

Budney, curator of the Macaulay Library's sound collection, joined Barksdale in Hawaii to capture high-quality audio recordings that the video camera would be unable to pick up. "Just weeks before, I had been in England," Budney says, "and the predominant things I'd seen as I walked along the coastline were gorse and Sky Larks. On our way up the mountain to Hakalau National Forest Wildlife Refuge, what I saw was unbelievable—gorse and Sky Larks. It took me days to get over it. Here I was on a remote Pacific Island, but it was just like what I had seen in southwest England."

That's the Hawaii most people know—a bizarre assemblage of plants and animals from various parts of the world. Not a single native bird made it onto Project FeederWatch's "Top 10" list of feeder birds seen most frequently in Hawaii. The list includes the Spotted Dove from Asia, Northern Cardinal from North America, Red-crested Cardinal from South America, and House Sparrow from Europe by way of New Zealand. Most residents of Hawaii never see any of their native birds, which once extended from the Big Island's high elevations all the way down to the sea. Those birds are virtually gone from regions below 4,000 feet now, the consequence of a complex chain of ecological disasters that cascaded down beginning with the arrival of the first humans on the islands around 400–700 A.D.

Before then, the only plants and animals to reach the islands were those that flew or floated across more than 2,000 miles of open ocean. No mammals succeeded except the Hawaiian hoary bat, nor did any amphibians or terrestrial reptiles. A small number of birds from perhaps as few as 20 colonizations became the founders of Hawaii's unique avifauna. These birds exploited the islands' rich flowers, fruits, seeds, and insects. In as little as 3.5 million years, one finchlike ancestor with an evolutionarily labile bill gave rise to a stunning diversity of some 50 kinds of Hawaiian honeycreepers. The 23 extant Hawaiian honeycreepers include the Maui Parrotbill and Akiapolaau, which use their sturdy lower bill and curved upper bill to extract insects from wood; the Iiwi and Kauai Amakihi, which use their long curved bills to probe deep into the corollas of flowers; other nectar-sippers, such as the Apapane and Akohekohe, which use their more modest bills to drink from shallower flowers; and the warblerlike Maui Alauahio that gleans insects from leaves and bark with its small, simple bill.

Hunting and clearing land for agriculture and other uses took a massive toll on Hawaiian birds over the centuries, but the menagerie of exotic wildlife that humans brought from other parts of the world was even more devastating. Because Hawaii's plants evolved in a benign land free of grazing and browsing mammals, they lost their defenses against these herbivores. "We have nettleless nettles, mintless mints, spineless raspberries, and briarless greenbriars," says Jack Jeffrey, wildlife biologist at the Hakalau Forest National Wildlife Refuge. These were easy pickings for the pigs, cattle, sheep, deer, goats, and rabbits that accompanied people to the islands. "It was a giant salad bar," Jeffrey says. "We lost the understory plants and, in some instances, the whole forest." After the cattle and pigs trampled and devoured the native vegetation, ranchers introduced grasses that were adapted to grazing, such as kikuyu grass from Africa. For Hawaii's birds, the sudden appearance of pasture created an unrecognizable landscape with none of the food sources needed by the wood-borers, the nectar-sippers, and the leaf-gleaners.



A Kauai Amakihi perches on a flowering lobelia. Found only on the island of Kauai, this Hawaiian honeycreeper thrusts its bill into flowers and sucks the nectar using its specialized tubular tongue. It also uses its strong curved bill to pry bark from trees and extract insects from the crevices.

In the forest that did remain, the native birds encountered new predators: rats, mongooses, dogs, and cats. For millennia, the only predators had been other birds, such as the Io, or Hawaiian Hawk. To evade these predators, a young bird could drop to the ground and hide in the understory, an ineffective

Introduced species have devastated Hawaii's landscape and wildlife. In a degraded koa forest (above), cattle have grazed the native understory vegetation, leaving an open pasture filled with invasive grasses.

strategy against mammals. Even the birds' body odor, which never mattered before, became a liability. Hawaiian honeycreepers have a musty smell that rats, cats, and mongooses can follow to find roosting birds or their nests. Hawaiian birds are poorly adapted to furry creatures that crawl up to them at night; one scientist documented how 20 rats fed on a Laysan Albatross as it incubated its eggs, killing it by morning.

Populations of birds already devastated by habitat destruction and predation have been further reduced by disease. The winged creatures that humans brought to the islands—nonnative birds and mosquitoes—carried avian pox and avian malaria. With untested immune systems, native birds have perished below the "line of death," approximately 4,500 feet—altitudes where mosquitoes spread malaria most effectively. Under normal circumstances, Hawaii's higher elevations would be inhospitable to mosquitoes. Even though some of these areas receive 200 to 300 inches of rain per year, the porous soil and streams carry it away so rapidly that virtually none of it is left as standing water. But pigs have created spawning grounds for mosquitoes by chewing on tree ferns and eating the starchy core, leaving a small trough that collects enough rainwater to breed thousands of larvae. Mosquitoes now inhabit regions as high as 6,000 feet. Fortunately, the parasite that causes malaria apparently can't complete its life cycle within the mosquito at the highest elevations.

It wasn't until Barksdale and Budney reached the fence marking the beginning of the Hakalau Forest National Wildlife Refuge at 6,500 feet that they suddenly found Hawaii's birds. "It's like night and day on either side of the fence," says Budney. The area outside the fence is treeless and choked with gorse—remnants of an old cattle ranch. Inside the fence, feral cows and pigs have been removed, gorse and other weeds controlled, and native trees replanted. "It was absolutely vibrant," says Budney. "We saw the Iiwi moving around from tree to tree, displacing one another. We watched as the Akepa did their flight songs, flying from the tree, sweeping down, and singing. Almost all of the native birds that should have been there were there, including four endangered species."

In the refuge Barksdale and Budney found more birds than they could possibly record at once. "Iiwi were calling everywhere and there were incredible densities of Akepa moving like red rockets from tree to tree," Barksdale says. As Barksdale filmed, Budney worked in the same area to record the birds' sounds, staying far enough away to keep his sensitive equipment from recording the mechanical whir of Barksdale's camera.

Standing near a grove of koa trees, Budney captured one of the most challenging vocalizations to record: the song of a male Akepa. Because several males tend to sing at once, recording a clean song is a feat of luck and timing. "I saw a male Akepa copulate with a female in the crown of a tree," Budney says. "A fraction of a second later he leaped off the perch. I instinctively aimed the microphone and tracked him as he was coming down, and he started singing." As the male swooped downward in a slow, graceful arc, Budney recorded the *teedle leedle leedle leedle* of the male's lilting voice.

For Barksdale, the highlight was recording the endangered Akiapolaau, a greenish yellow Hawaiian honeycreeper that hitches along trees, pounding the bark with its short awl-like lower bill and using its long upper bill to probe for and hook insects. "I had perfect focus, and I could see the aki through the viewfinder hammering, hammering, hammering, pulling the little larva out of the wood, and wiping its bill," Barksdale says. "Even though its upper

Pigs trample native plants (right) and consume ferns, eating the plants' starchy core but leaving a trough where rainwater collects and breeds mosquitoes. On the Big Island, native birds are virtually absent where mosquitoes (above right) spread diseases below 4,500 feet.

Intensive efforts to restore native habitats are paying off in Hakalau Forest National Wildlife Refuge. There, Barksdale and Budney recorded the bright red Akepa (above left) as it rocketed from tree to tree.

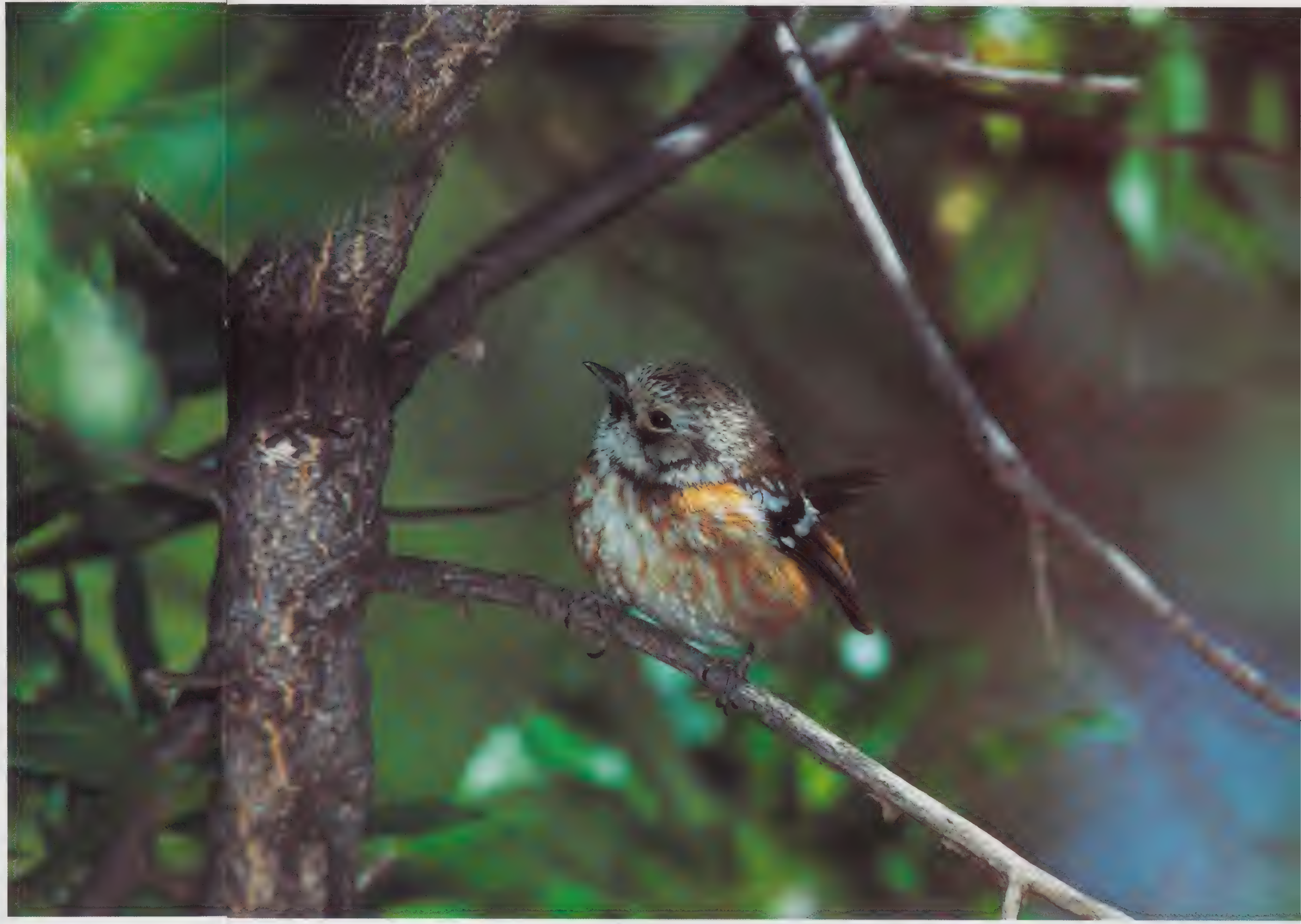
mandible is so much longer than the lower one, it maneuvered them so they touched at the tips and the bird could grasp its prey. That bird was so incredible, so specialized and unique," says Barksdale, "I get emotional just thinking about it."

As a result of habitat restoration efforts at the Hakalau Forest National Wildlife Refuge, the Akiapolaau and other native birds are beginning to claim back forests that were destroyed or damaged during cattle ranching decades ago. When the refuge was established, more than a quarter of its 16,000 acres were open pasture. Since then, the refuge has expanded to 33,000 acres, and cattle and pigs have been removed from two-fifths of that area. To restore the habitat, refuge staff and volunteers have removed gorse from all but 20 acres and are controlling nonnative blackberry, holly, and grasses. They have introduced a fungus to kill banana poka, a vine that can climb native trees, shade out understory plants, and cause the canopy to collapse. Since 1989, volunteers have planted 250,000 trees, mainly koa, known as the mother of the forest because it can colonize open sunny areas, later providing shade and nutrients that other native plants need. Some of the koa trees are now 20 to 30 feet tall in areas where only 20 years ago there had been nothing but grass.

The Amakihi, Elepaio, Apapane, and Iiwi are seen regularly in these planted woodlands now, and the Akiapolaau is moving in to tap the bark of the new koa trees in search of insects. "These birds wouldn't be there if it was just open pasture," Jeffrey says. "We've created habitat for them—something that I didn't think would ever happen in my lifetime. I figured it was going to take 100 years before the Akiapolaau moved back in there. And son-of-a-gun, in 10 years they're utilizing that habitat."

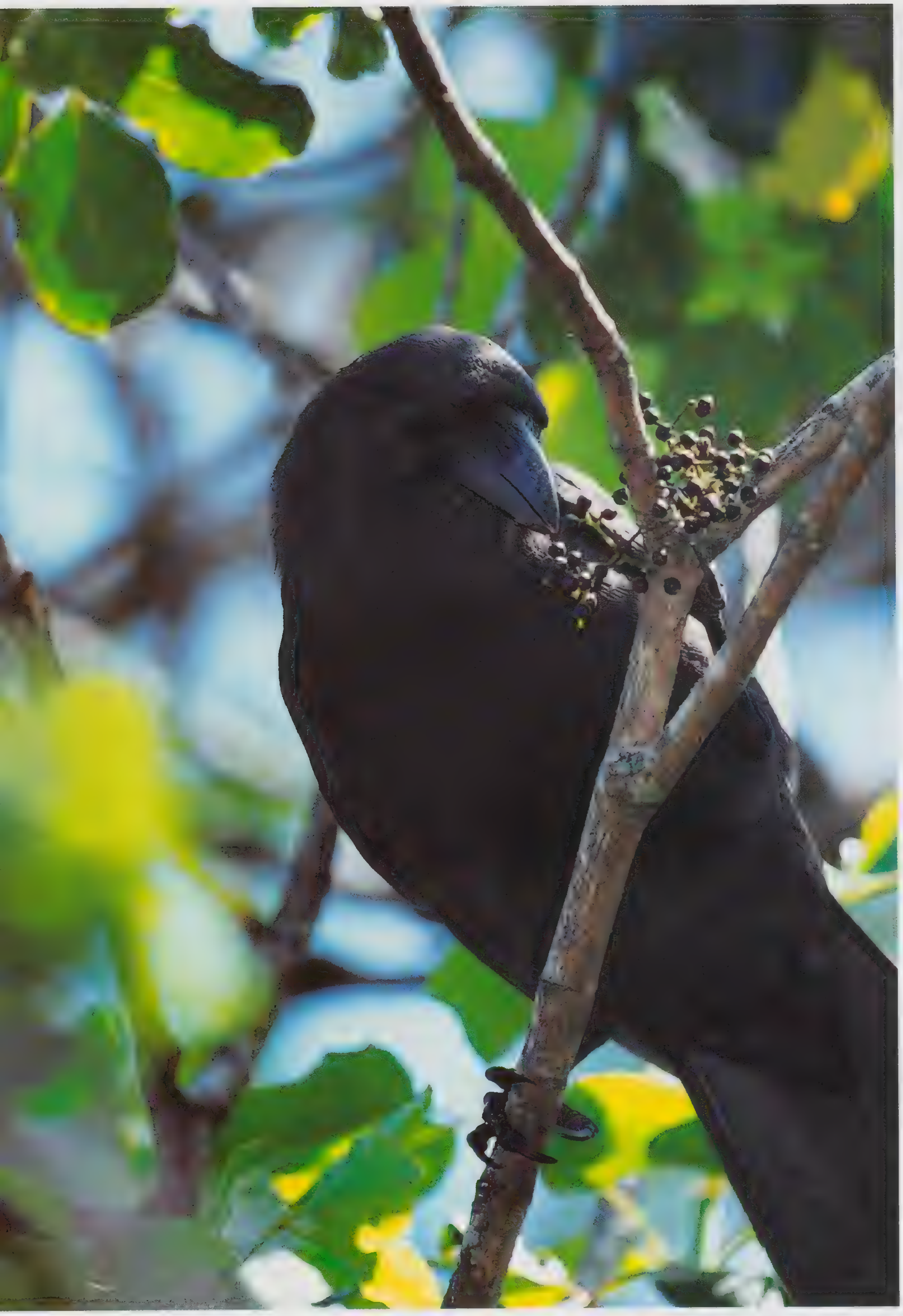
Although Hakalau is a heartening example of how conservation efforts can reverse habitat degradation caused by invasive species, Jeffrey is quick to point out the potential for much more to be done. "Give us a few million dollars," he says. "Many people don't realize the importance of national wildlife refuges in protecting native and endangered species throughout the United States, and neither does Congress, otherwise funding for refuges would be much, much higher." In the uphill battle for funding, the advocates of Hawaii's native wildlife know that the prospects are dim unless more people begin to care about these unique species, and that people generally don't care about what they don't know.

"The big problem with Hawaii's appreciation and protection of native birds is that very few people ever see them," says Jeff Burgett, a biologist at the Hakalau Forest National Wildlife Refuge. Additionally, the native avifauna had never been filmed or videotaped extensively before the Macaulay Library's expedition. As a result, Burgett says, "People here know more about bowerbirds and boobies than they do about Hawaii's forest birds." If these birds can make their way into people's consciousness—whether through video footage in the classroom, over the Internet, on television, or in a session in Congress—it will be an important step toward increasing the kind of appreciation needed to make a bigger difference.



The two also found the Elepaio, a monarch flycatcher (above), and the endangered Akiapolaau (below, left). The Akiapolaau uses its short chisel-like bill to hammer into wood and hooks insects in crevices using its long curved upper bill.

By the time Barksdale and Budney wrapped up their work at Hakalau and the other locations, they had recorded all of the Big Island's native species except one: the Alala. Biologists considered this species to be "functionally extinct" in the wild because, despite annual nesting activity, the last wild pair had failed to produce any eggs for several



Tim Barksdale (right) captured the only professional video footage of wild Alala before the last pair disappeared in June 2002. Above, a male Alala.

years. Filming these wild birds could have two important consequences: it could help reveal natural behaviors that biologists might use to inform reintroduction efforts of captive-bred birds, and it could preserve, for future generations, an important part of Hawaii's biological and cultural heritage. "Hawaii needs a symbol that will grab people and make them care and engage again with the native habitats," says Burgett. "A lot of people feel that the Alala is a prime example because it's intelligent and stately. It's a bird that people have tended to ascribe spiritual power to, just as some Native American cultures did with the raven. But it's one that the last generation has grown up never knowing."

The territory of the Alala pair was on a private cattle ranch, and Budney and Barksdale were only granted access on the last day of their expedition, on the condition that they would stay only 24 hours and that Burgett would accompany them. They hauled more than 200 pounds of recording equipment, cumbersome blinds, and other gear up the rugged hillsides to 7,500 feet. Arriving around 3:00 A.M., they debated where to set up the blinds. Their decisions would be crucial; to minimize disruption, they had to agree to stay within the blinds the entire time. If they placed them in the wrong spot, they might miss the Alala altogether.

They decided that Barksdale would shoot video footage near the nest, where Burgett had monitored the pair from a blind nearby. Budney would record vocalizations near a koa tree where the birds might come to forage. Setting up their equipment in darkness, they had no way of knowing how the birds would use the surrounding area. "We didn't really get much sleep that night," Barksdale says. The first light of morning revealed both birds sitting in the nest—but a large branch obscured part of Barksdale's view. "Finally the male came out of the nest, hit the branch at the top, and paused and picked a couple of berries before he jumped down," Barksdale says. "I was able to record him when he did that three or four times throughout the day."

The real drama, though, happened at the koa tree near Budney's blind, where the microphone lay hidden beneath a camouflage cloth. "About half an hour after dawn, I heard the bird's footsteps on the mike, and the next thing I knew, he was whaling away on the microphone," Budney says. "Later, at 4:00 P.M., the male flew in and I heard him land right above my blind. I looked out the window, a small slit, and saw him directly above me, seemingly looking down at me. Then he began foraging on a large root of a koa tree, hammering away at it like a woodpecker. He followed that root, which cradled the blind, until he came to the end of the root and saw an ohia tree with large vertical flaps of bark. He probed the bark for three or four minutes, sticking his entire head inside the flaps, then took off and disappeared from sight." Later, the male returned with his mate and, in Budney's clear view, presented the female with a berry. He raised and flattened his head feathers as he interacted with her, trying to persuade her to accept the gift. "He kept trying to feed her this berry, rolling it back and forth in his beak, but she would have none of it," Budney says. "She plucked her own berry."

"It was 10:30 at night when we finished," Barksdale says. "We had been in the field for 22 hours that day. We were exhausted but elated." Although Budney had only heard and recorded a portion of the birds' range of vocalizations and Barksdale had been limited to the obstructed view of the nest, they hoped to return someday to document more of this remarkable pair's interactions. Unfortunately, just two months after they captured the sounds and images of these bold and memorable creatures, the Alala disappeared. The pair hasn't been seen since June 14, 2002. In the face of this tragic loss, researchers involved in the Alala recovery are now focusing their efforts on the 37 captive Alala. Many of these birds and their offspring may eventually be reintroduced to the wild.

Meanwhile, the Macaulay Library's quest goes on to document the world's birds and to share these sounds and images with the public. Already a program featuring the birds that Barksdale and Budney recorded in Hakalau's forests has aired on a public access channel in Hawaii. In Ithaca, New York, visitors to the Lab of Ornithology who step into its new multimedia surround-sound theater are transported to Hawaii, where they watch the birds that Barksdale and Budney encountered and learn about Hawaii's natural history. When the collections go online later this year, researchers and conservationists from around the world will be able to use the footage to study how birds interact with one another and cope with the challenges in their habitats. Educators can select sound and video clips of birds and their captivating behaviors to bring into lecture halls and classrooms. By sowing these seeds of knowledge and appreciation, the birds that Budney and Barksdale recorded may speak to the next generation of citizens and conservationists who can be advocates for wildlife not just in Hawaii, but everywhere. "When I was a kid, a single computer could fill up an entire building," Barksdale says. "Now computers live on little kids' laps. It's such a profound change that we'll get to share this video footage with people around the world, instantly. Who knows what that will do? Who knows what person that will touch?" ■

SPONSOR A SPECIES

The Macaulay Library will soon launch a five-year program to complete an unprecedented multimedia collection of the birds of North America and Hawaii. By sponsoring a species, you can join the Macaulay Library's efforts to acquire sound and video recordings of every bird species, subspecies, and color morph, as well as a complete repertoire of behaviors and song dialects. Your donation will make it possible to record and archive the sounds and images of your favorite birds, to become a permanent part of the Macaulay Library's historic collection for use by scientists, conservationists, educators, and the general public.

All donations will be used exclusively to fund special expeditions to film and record the sounds of North America's birds and to acquire and archive existing recordings. These recordings will be preserved and shared with tens of thousands of people through the Internet. The Macaulay Library will accept donations by groups as well as individuals. Consider organizing your local birding club or other group to choose a bird species and donate the funds for sound and video clips that future generations will enjoy and learn from. Sponsorship levels will vary depending on the species. Look for the launching of this program on the Macaulay Library's web site, accessible from the Lab of Ornithology's home page <www.birds.cornell.edu>.

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Crossing the Digital Divide

Why one top bird photographer decided to abandon film after two decades and go digital

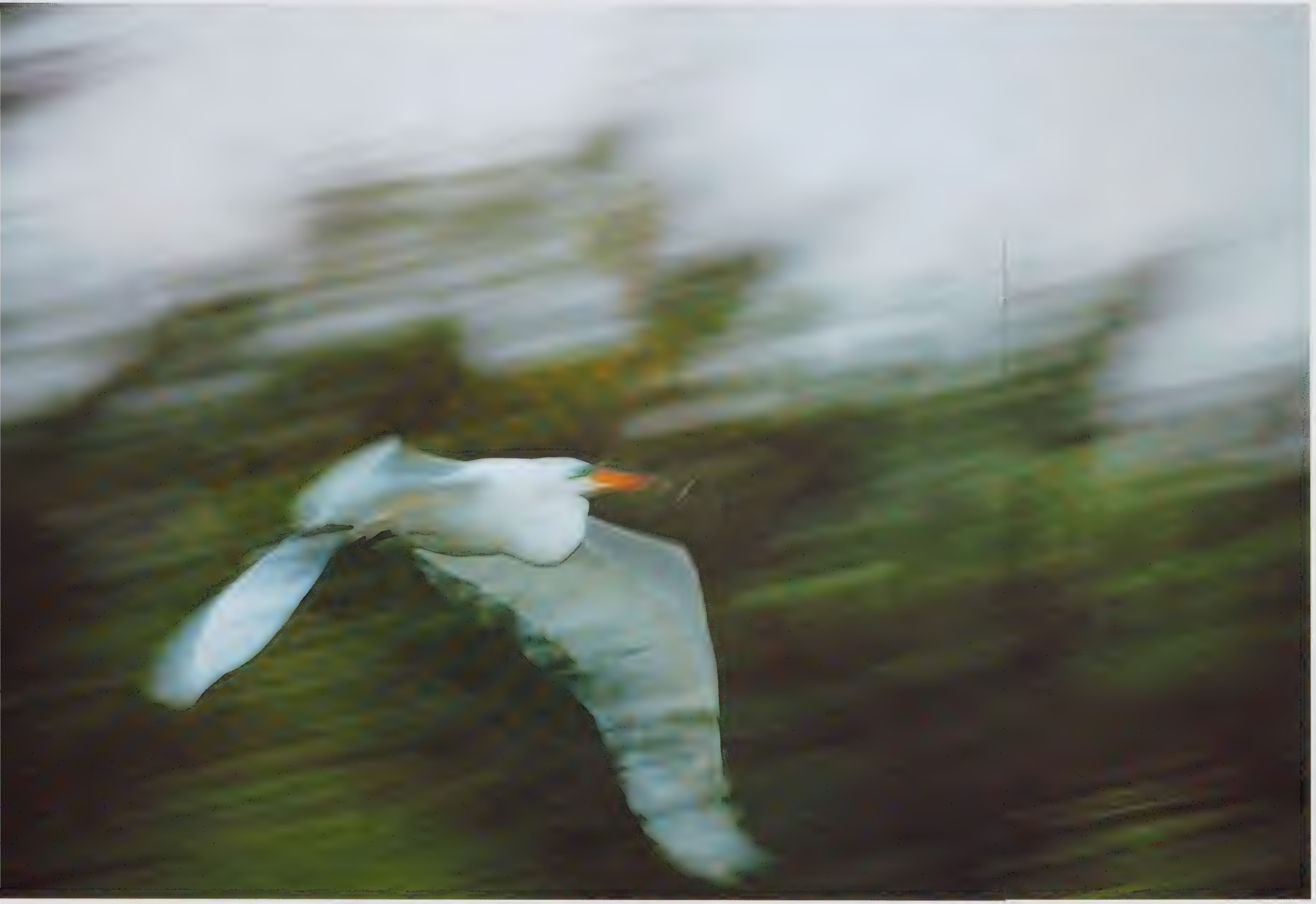
TEXT AND PHOTOGRAPHS
BY ARTHUR MORRIS

For several years, nature photographers have been debating the pros and cons of digital photography and wondering if the time is right to give up their conventional film cameras. Many of them, myself included, have been resisting this change. As recently as early 2002, I wrote that sometime in the distant future—probably around the year 2023 or so—I would surely be one of the last professional photographers still using film. And yet, when I made my annual pilgrimage to New Mexico's Bosque del Apache refuge last November, I took along my very own brand-new Canon EOS 1D digital camera.

Although I also brought several film cameras, I ended up using the digital camera almost exclusively on that trip, shooting only 12 rolls of film in the entire 17 days. A few weeks later on a 10-day trip to San Diego, the digital 1D was the only camera I brought. And on my 19-day trip to Tanzania that began on January 22, 2003, I brought two camera bodies: the 1D and a Canon 1Ds (which produces a relatively huge 11-megapixel file, nearly three times the size of the files produced by the 1D). Why this sudden and dramatic change of heart?

First and most importantly, digital photography is fun. Although I have enjoyed photographing birds and other natural history subjects every day that I have been afield since August 1983, I enjoyed taking pictures at Bosque last November more than I ever had before. And the fun continued nonstop on my Africa trip. Digital photography allowed me to experiment creatively with slow shutter speeds (especially when hand-holding

I photographed this Western Sandpiper in pre-alternate molt at Fort DeSoto Park south of St. Petersburg, Florida. After checking the histogram on the first image I made after getting down into a muddy pool of salt water, I knew that all of my exposures would be perfect.



This image of a Great Egret in flight is one that I would never have attempted with film. I was experimenting with the predawn light and had set my exposure manually to 1/25 of a second at f/5.6 after making a few test images with the flash set at -1.

an intermediate-length telephoto zoom lens) and to try many new techniques with flash. These included flight photography in low light with flash and flash blurs (using electronic flash in conjunction with extremely slow shutter speeds). Each of these techniques yielded many wonderful images, different from anything I had done before. And the digital format gave me the freedom to try my first zoom blurs, zooming in or out when using slow shutter speeds.

It's not that you can't achieve similar results with film, but when doing so you are experimenting blindly, and the results can be both disastrously bad and relatively expensive. With film, each frame costs about 30 cents, and you can easily expose more than 100 frames when you try a new technique. With digital, however, it does not cost a penny to try something new, even with techniques that really push the creative envelope. Your total "film and processing" costs with digital are zero. In addition, you can fine-tune your results right on the spot by checking out the small LCD image on the back of the camera and by checking the histogram—the graphic representation of an image's exposure information. If the exposure is not what you wanted, you can make the image lighter or darker as needed simply by using the exposure compensation dial to add or subtract light.

Digital cameras handle contrast far better than most films, maintaining detail in both very dark and very light areas of an image. Also, digital offers far greater exposure latitude—as long as you do not grossly over- or underexpose an image, exposure errors are easily corrected. And by using raw mode, which offers the largest files, it is a snap to correct exposure errors before converting the raw images. (The raw images that come directly from the camera cannot be viewed by most software.) A further plus is that most digital cameras offer an overexposure alert feature—when you view the LCD image, any area with overexposed highlights will flash black, warning you that the image should have less light. And this exposure correction can be accomplished simply and quickly.

Part of the fun of digital photography is the immediate gratification it provides. No more waiting a week for the film to get back from the processing lab. With digital photography, the feedback is immediate. A quick glance at the histogram lets you make sure that the exposure is the way you want it to be. Although viewing the image on the camera's LCD screen has its limitations (it's not easy to judge critical sharpness on most digital camera bodies), you can download images to your laptop at lunchtime or in the evening and know whether you have gotten the images you were after. On an extended journey, this can mean the difference between coming home with great images or empty-handed.

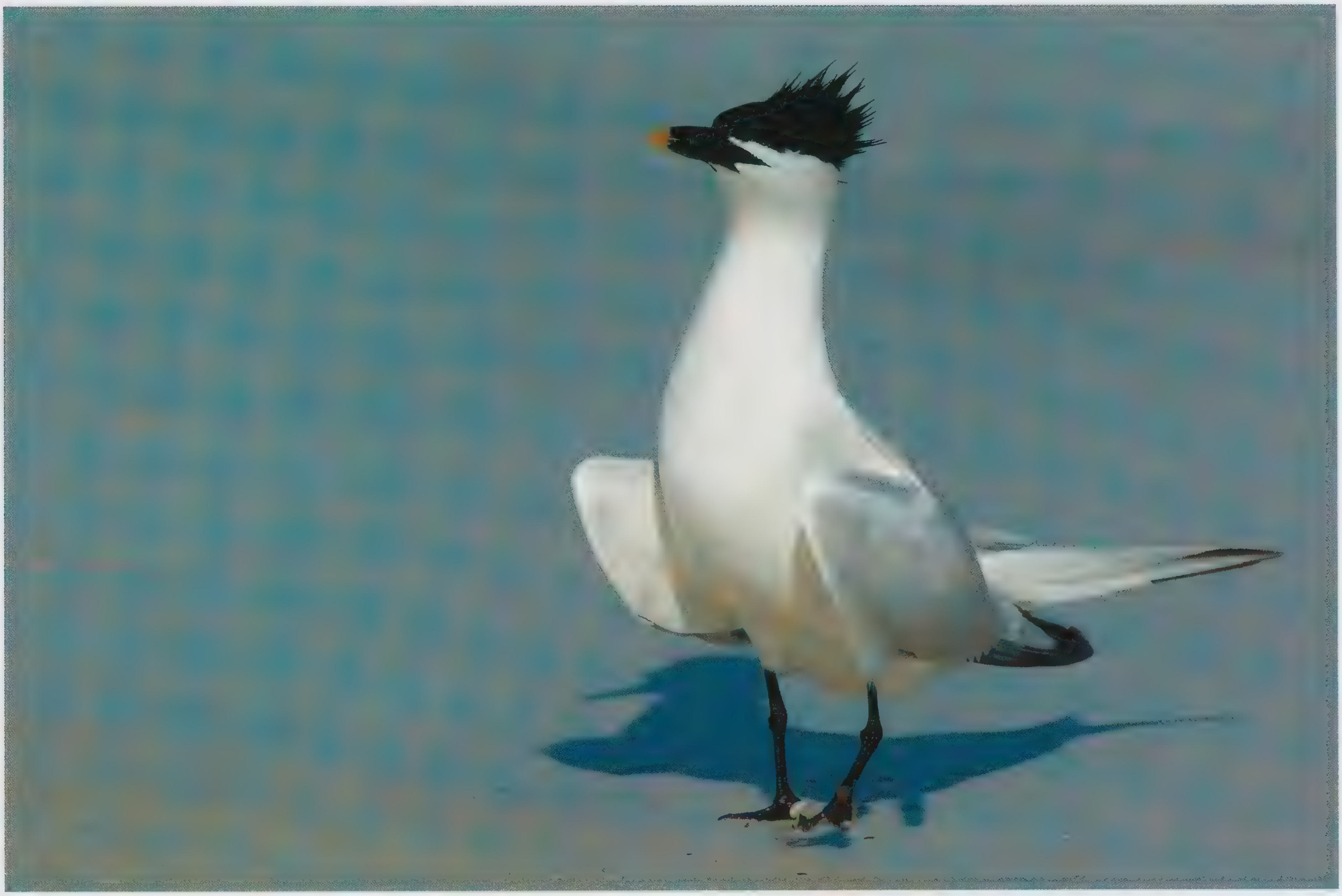
I lead many photography workshops, and digital photography is an absolutely incredible teaching tool. Using a digital camera, workshop leaders can share compositions in the field on the LCD screen. They can also share images with the group at lunchtime or in the evening to illustrate various photographic principles, to show what the students should or should not be doing, or simply to provide inspiration. For students with digital cameras, the instructor can offer help with composition, image design, and exposure right on the spot, in the field. And the students can share photos with the rest of the group on a laptop computer after the field session is over; critiquing the images is a natural follow-up activity.

In 2000, 2001, and 2002, my business, Birds as Art, spent thousands of dollars on film and processing. With digital, these costs are completely eliminated. We also spent an enormous sum making 35mm and 70mm duplicates for distribution and for use in slide programs. Again, with digital these costs will be drastically reduced. Our only expense will be the cost of blank CDs or DVDs on which to copy the images.

When using film, I often made numerous images whenever I encountered a great situation. In fact, I'd often take nearly a whole roll of the same subject in the same pose to get these "in-camera duplicates." The reason was simple—since no second-generation duplicate is ever quite as good as the original transparency, I strived to create multiple originals. With digital, one good original can be archived and duplicated as often as need be. And all of the "copies" are identical to, and therefore as good as, the originals.

I have already purchased a digital projector, and soon I will no longer have to lug around trays of slides to various speaking en-

Part of the fun of digital photography is the immediate gratification that comes with seeing a great image while you are still out in the field. I was photographing a turnstone when my teaching assistant Ellen Anon called my attention to this Great White Heron.



gagements around North America. The quality of digital projectors has increased dramatically in the past few years to a point where projected digital images look almost as good as projected slides. And the price of these projectors is dropping steadily.

Traveling with film, especially with the large amounts required for long overseas trips, has become increasingly difficult in the post-9/11 era. The sheer weight and bulk of 300 rolls of film in addition to a photographer's normal complement of carry-on baggage (which generally includes two camera bodies and several lenses, including a super-telephoto) is a big travel burden. Film must never be sent in checked baggage because many airports now have powerful x-ray machines that can destroy most films. Security personnel may insist on x-raying film, and the cumulative effects can cause problems. In some foreign airports, a single pass through even the security x-ray machine can destroy a month's work. X-rays, however, have no effect on the compact flash cards on which digital images are recorded or on the laptop computers on which they are saved and stored.

Moreover, digital photography is much kinder to the environment than film photography. Film manufacture and processing involve using poisonous chemicals, silver, and plastic, and most of these materials end up being discarded. Although the manufacture and disposal of computers and their various components also have an impact on the environment, digital photographers account for only a tiny fraction of the total number of computer users worldwide. In addition, it is obvious to me that the environmental impact of a single flash card used several thousand times over will be a tiny, tiny fraction of that resulting from the use and processing of many thousands of rolls of film.

I was thrilled when *Living Bird* editor-in-chief Tim Gallagher asked me to write this piece, and I applaud both Tim and design director Kat Dalton for their willingness to take a chance with digital imagery at a time when many editors and designers are unwilling to do so. The quality of the images produced by high-end digital cameras like the Canon EOS 1Ds far exceeds the quality attainable with any 35mm film. Digital photography is the wave of the future, and I for one am happy to be riding the early crest. ■

Arthur Morris is a world-renowned bird photographer as well as an educator and author. His most recent book is The Art of Bird Photography. *Visit his web site at <birdsasart.com>.*

Subjects with bright highlights set against middle-toned backgrounds generally require 1/3 stop of underexposure with matrix metering systems. The highlight alert feature on my Canon EOS 1Ds let me know that I needed to underexpose a bit more when I photographed this Roseate Spoonbill (left). This displaying Sandwich Tern (above) was photographed at about eleven o'clock on a bright sunny day. Digital's ability to handle contrast far better than film was instrumental in producing a pleasing image in relatively harsh lighting conditions.

An Ecological Tragedy on Delaware Bay

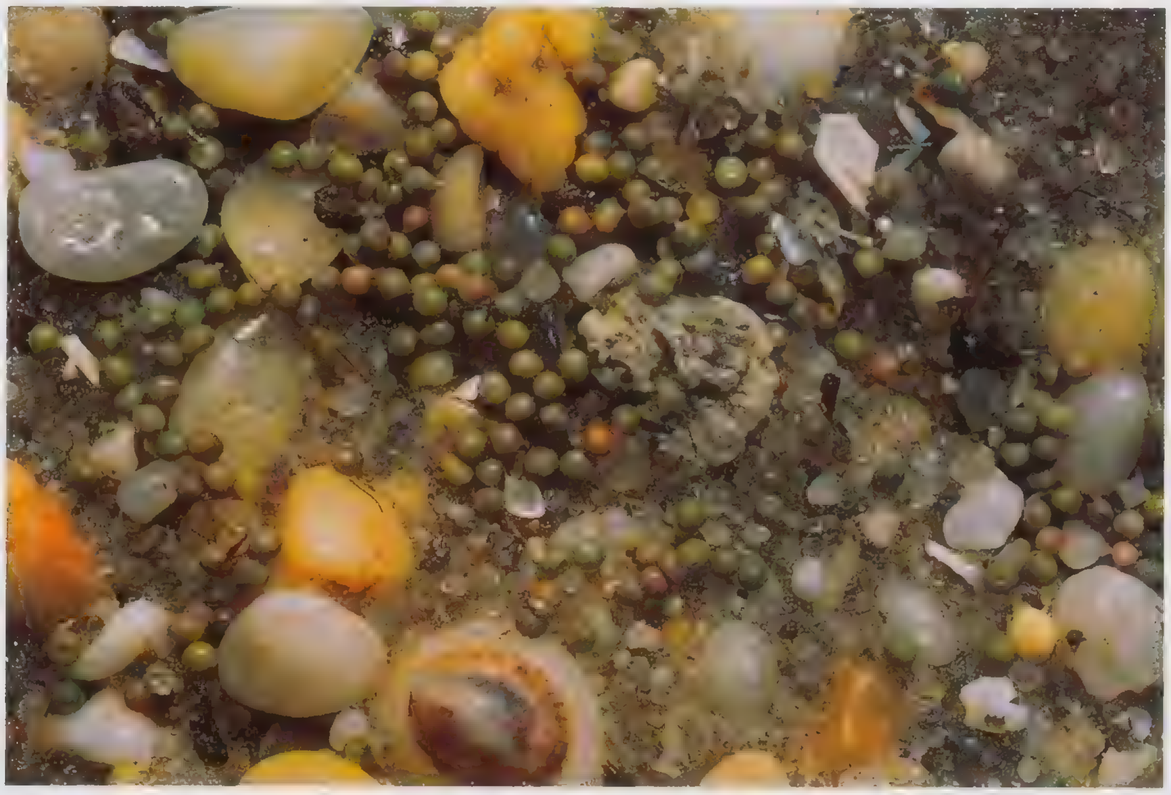
BY CLAY SUTTON

Have we killed the crab that lays the golden eggs?

Each spring, horseshoe crabs swarm across the beaches of Delaware Bay to spawn, providing a rich feast of eggs (below) for thousands of migrating Red Knots and other birds. But the entire phenomenon is threatened by overharvesting of the crabs.

To the casual beach-walker, the scene unfolding might have looked like a typical seashore event—a couple of vanloads of people arriving for another day at the beach. First to step out was a tall woman, tanned, blonde, and barefoot, and she greeted the morning with a smile on her face and an obvious spring in her step. Twenty "tourists" soon followed, gathering around her in rapt attention. All headed straight for the water with relish and anticipation.

It soon became obvious that these folks were not here to lie on the beach, but to look and to learn. They were ecotourists, some from as far away as California and Hawaii, and all had come to this Delaware Bay beach to see the timeless interlocking migrations of horseshoe crabs and shorebirds. Some were accomplished birders, some were not, but all had come to learn and, yes, to have fun too.



FRED BAVENDAM/MINDEN PICTURES (2)

Windbreaker abandoned for a T-shirt, tour leader Karen Williams began to teach in the way that only a dedicated veteran naturalist can. She delved into the history, the background, the dynamics. She humbly but with pride talked of her own horseshoe crab nesting counts in the early 1980s (which today are a key baseline). Karen was animated, excited, pointing out passing Red Knots and mating Laughing Gulls, and answering questions about skate egg cases, moon snails, tiger beetles, and even greenhead flies.

Anyone who knew Karen, though, would have sensed her growing nervousness as she constantly looked around. She knew things were not going right. By the end of the second hour, Williams had not exhausted her considerable skills as a naturalist, but she was running out of steam. She had worked the marsh behind the beach for Seaside Sparrows, explained the differences in the various *Spartina* species, and pointed out northbound migrating red admiral butterflies. She found a long-dead horseshoe crab up in the spring tide wrack-line, to use for the planned lesson in crab anatomy.

Finally, Karen was no longer smiling. In

frustration, based on a mixture of concern for the resource, care for her clients, and a little embarrassment that she couldn't "produce," a combination that nearly brought her to tears, she announced the inevitable. "Well, as you can see there are no horseshoe crabs here—and darn few birds. There were quite a few last week, and they should be here, the moon is right, but . . ." Her voice trailed off as she faced the bare facts. It was the third week of May, and there wasn't a single horseshoe crab on this Delaware Bay beach.

Alexander Wilson was the first ornithologist to document the existence of massive shorebird concentrations on Delaware Bay, but he would be the last one to see it for over 150 years. It wasn't until about 1978 that the horseshoe crab and shorebird phenomenon was rediscovered. Jim Seibert, a bayman and noted decoy carver, knocked on the door of New Jersey Audubon Society's fledgling Cape May Bird Observatory (CMBO) and said, in effect, "You know, I've got a *lot* of shorebirds on my beach in May." Pete Dunne, who was then basically the entire observatory staff, and maybe still a little wet behind the ears, responded with a bit of doubt if not skepticism, "How many is a lot?"

FRANS LANTING/MINDEN PICTURES

Actually not a crab at all but a relative of spiders, horseshoe crabs have been around for more than 350 million years. Each female lays as many as 20,000 eggs in a single spring. Above, a pair of mating horseshoe crabs at Delaware Bay.

The rest, as they say, is history. A lot turned out to be more than 1.5 million—the third largest shorebird gathering in the world, feasting on the eggs of the largest population of horseshoe crabs on the planet. CMBO carried out the first shorebird counts there, which, as much as the migrating hawks in autumn, put CMBO forever on the map and made Delaware Bay a peak destination for birders worldwide.

There is a reason, however, that for 150 years, no one saw concentrations of shorebirds on Delaware Bay. They simply were not there. If they had been, they would have been hunted, but Delaware Bay has no history of shorebird gunning—no decoys, no lore, no clubs, no journals. There *is* an extensive waterfowl (ducks and geese) decoy record for the bay and a comparative shorebird record and legacy from the nearby Atlantic coast. Yet none exists for Delaware Bay, even at the height of shorebird gunning and market hunting in this country.

Why were the massive shorebird concentrations absent from Delaware Bay at that time? Because the horseshoe crabs were gone. Although horseshoe crabs may have existed for 350 million years, long before there even *was* a Delaware Bay, it took less than a century to virtually extirpate the crabs from the bay. From the early 1800s to the early 1900s horseshoe crabs were harvested for fertilizer and hog food, and wagonloads of their eggs were carted off to feed chickens. Vast weirs corralled untold millions of horseshoe crabs each season. They were transported to pens, dried, and then ground up in factories to spread on fields near and far. The harvest of these "king crabs" was a major industry for the Delaware Bayshore.

But it was not sustainable. Crabs don't breed until they're nine years old or more—a fact we only learned in the past couple of years—and couldn't recruit new breeders fast enough to make up for their losses. As early as 1870, crab populations were reported to be depressed, and by 1908 there was concern for the future of the fertilizer industry. Finally, at some undocumented time early in the 20th century, the crab industry flickered out and died because there were no more crabs.

It is realistic to assume that horseshoe crabs never fully disappeared from Delaware Bay, but shorebirds depend on a superabundance of crab eggs. These eggs are found only in the tideline, and shorebirds feast on them when they are stirred up by other crabs as they lay and fertilize their eggs. It takes an excess, perhaps millions of crabs, to create the egg wash-up and "slurry" necessary for shorebirds to feed efficiently—eggs have a poor nutritional content, so shorebirds need to eat a lot to put on weight. Even if a few crabs still nest successfully, their eggs won't feed the shorebirds.

We may never know what happened to the shorebirds when they disappeared from Delaware Bay. Shorebirds are both opportunistic and long-lived. Did these Red Knots disperse elsewhere, or did their populations crash? How low did their numbers fall? Sadly, virtually no data exist prior to CMBO's first surveys in 1981 and 1982. It took crabs 75 years to recover, and when the crabs were rediscovered in 1978, the knots and other shorebirds were already abundant on bay beaches. Since then, in 20 short years, maybe only two or three generations of Red Knots, the birds have declined by more than 66 percent on Delaware Bay, and by 57 percent at their principal wintering grounds near Tierra del Fuego.

The why seems clear. The horseshoe crabs were rediscovered not only by birders and scientists, but by crab harvesters, and horseshoe crabs have declined by 75 percent in just 11 years. Six years ago, when crabs were still relatively plentiful, researchers (through recapture and marking studies) found that the Red Knots were gaining more than 8 grams of migration-sustaining fat reserves a day. In 2002, they only gained 2 grams per day, assuredly because they couldn't find enough eggs to eat. Now, many knots are probably no longer able to reach the threshold weight they need to fly the final leg to the Arctic to breed. Red Knots are disappearing again (along with the crabs) and are now urgently being considered for federal endangered species status. Once again, we have not learned from history. It took us only 75 years to forget how easily the crab population can be devastated.

Despite continually declining numbers of birds and crabs, ecotourism is up on Delaware Bay. It was Paul Kerlinger, former director of CMBO (following Pete Dunne), who in 1988 noted that standard conservation tools alone were not working to protect Cape May habitat or birds and crabs on Delaware Bay. In southern New Jersey, where tourism drives the economy, money talks the loudest. In a landmark study, Kerlinger determined that birders in Cape May County were bringing in more than $10 million each year, mostly in spring and fall, a real economic boost in these formerly off-season months. In 1998, just 10 years later, the New Jersey Department of Environmental Protection contracted Kerlinger and his colleague Ted Eubanks to assess the ecotourism value of the bird and crab aggregation alone. This study valued the industry at an astounding $34 million per year. With ecotourism clearly on the rise, and crabs plainly on the decline, why isn't it a no-brainer that the horseshoe crabs that underpin the entire phenomenon should be protected?

The U.S. Fish and Wildlife Service estimates that the entire horseshoe crab harvest industry, from Maine to Florida (there are also serious concerns and conflicts in Massachusetts and South Carolina),

Thousands of Red Knots stop at Delaware Bay in May to feed on horseshoe crab eggs while en route from South America to their nesting grounds in the Arctic. As horseshoe crab numbers plummet, Red Knots also appear to be declining sharply.

TOP: FRED BAVENDAM/MINDEN PICTURES. BOTTOM: KEVIN T. KARLSON

is worth $11 million annually. But fishermen claim economic multipliers too. The crabs are harvested as bait for conch and eels. These fisheries are valued at an additional $21 million, giving a total value of $32 million, which comes close to ecotourism's $34 million. There are some true ironies here. Conch, or knobbed whelk, are heavily fished in the mid-Atlantic because they have been overfished to the south. American eels, though perhaps not overfished, are either shipped overseas or are themselves used as bait for the burgeoning striped bass recreational fishery.

In the eerie light of sunset, thousands of horseshoe crabs emerge along the beaches at Delaware Bay to spawn (above). Unfortunately, crabs are no longer showing up in these numbers, nor are the birds that used to feed on their eggs.

FRANS LANTING/MINDEN PICTURES (2)

An additional irony is that eels will eat anything. Fishermen claim that only horseshoe crabs work as bait in their eel traps. But naturalist Karen Williams counters, "I used to catch eels on hot dogs when I was a kid. Hooks baited with chicken skins worked, too. Why not use offal from the chicken industry for eel bait?"

Only 33 fishermen currently hold permits to harvest horseshoe crabs in New Jersey, well below the 300 in the boom years of the early 1990s. All crabs must be harvested more than 1,000 feet from Delaware Bay beaches. New Jersey allows hand harvest only, and the quota in 2002 was set at 293,000 crabs (reported take in 2002 was 280,000). But crabs are also taken by both dredge and trawl in Delaware state waters, and the migratory Delaware Bay crabs are legally harvested all along the mid-Atlantic coast in the nonbreeding season.

Although there are only 33 current New Jersey crabbers, fishermen strongly close ranks at meetings and quota hearings. They proudly claim their heritage as baymen and loudly protest regulations as inevitably leading to the demise of their profession. Harvesters have said they would gladly accept a buyout, much as New England fishermen have been paid not to catch cod. One bayman at a recent hearing said that he would welcome the state buying out his horseshoe crab permit for $350,000. Rather than a buyout, Larry Niles, chief of New Jersey's Endangered and Nongame Species Program, came up with the innovative idea of paying baymen to work for the program. "We could easily use the fishermen to gather the trawl data and do crab and egg counts," says Niles. "We actually proposed to hire them to help us with the banding program. We always need additional help, and they don't mind getting muddy." The harsh retort of one fisherman tells much about the strong feelings of some baymen. "I'm certainly not going out there banding these birds. I shoot birds, I don't band them."

According to Williams, though, some fishermen have changed with the times. One local tour boat, the *Skimmer,* now offers "salt marsh safaris." "The captain is a former mate on a fishing boat, and after that he crewed on a whale-watch boat," she says. "Now he has a hugely successful bird and nature tour business. That's ecotourism at it's best."

Ecotourism values aside, one commonly overlooked aspect of the whole issue is the birding industry. A recent informal survey came up with 54 jobs in the southern New Jersey area that are directly related to Delaware Bay birds. The list includes professional naturalists, tour leaders, wildlife photographers, land managers, educators, and researchers; CMBO alone now employs a staff of 16. Karen Williams has a family to feed too. "My work with the crabs and birds is seasonal, just a part of what I do overall," says Williams, a self-employed professional naturalist, marine biologist, and wildlife gardener and landscaper. "But it's seasonal for the fishermen too. These fishermen haven't fished crabs forever. This whole thing came about in just 12 years or so, harvesting the crabs from abundance to near nothing. The sad part is that a local bait industry would have been possible, sustainable, if they had regulated the take back in the 1980s and stopped the mass export of crabs. Crabs were so abundant then that crab strandings *alone* would have supported a local bait industry." Williams fears that the crab and bird system may have crashed. She believes it could be resurrected but that it may take an extremely long time.

Whether the system has truly crashed is the subject of extensive debate, and at times, almost frantic research. Although tinged with a doomsday gloom, there is a palpable fervor among the crab and shorebird researchers. Larry Niles is on a quest. He not only coordinates all the research, but leads, hands-on, the Red Knot banding program on Delaware Bay. At the end of spring migration, he follows the knots to the high Arctic, near Nunavut's Southhampton Island, to ascertain their breeding success. In winter, like the knots, he migrates south, joining researchers in Chile to conduct winter censuses. An international coalition of researchers has made the plight of the Red Knot a top conservation priority.

"The failure to put on weight on Delaware Bay can have repercussions throughout the yearly cycle and throughout the hemisphere," says Niles. "If they can't migrate north, they won't breed. Fewer breeders or poor success means fewer fall migrants and wintering birds. Our data are pretty grim. Using our best models, at the rate they are declining, the population of Red Knots using Delaware Bay will be extinct by 2010 unless we can turn it around. This could be the entire *rufa* race of Red Knot—they all use Delaware Bay. The Red Knot will be listed as a federal endangered species if nothing changes, probably this year. We listed it as a state threatened species years ago." Although he has legions of partners, colleagues, a highly dedicated staff, and dozens of volunteers, most would agree that if the Red Knot is saved, Larry Niles will have saved it. His passion and complete dedication to the task make him an appropriate icon.

Further complicating a complex issue, horseshoe crabs are critical to the health care industry, providing blood used in biomedical testing. The lysate derived from horseshoe crab blood is currently the only means for testing injectable medicines for purity (including smallpox vaccines—of current homeland security concern) and detecting several diseases, including spinal meningitis. "Human health would be severely jeopardized by the overharvest of horseshoe crabs," says Eric Stiles, vice-president of conservation at the New Jersey Audubon Society (NJAS). "We're trying to bring the lysate industry to the table," says Larry Niles. "They are a major stakeholder, but so far they've stayed out of the controversy completely."

Another unknown is how long it might be, at current crab decline rates, before the lysate industry can't get enough crabs to bleed. The lysate industry currently uses more crabs than the bait industry, about 300,000 per year. The biomedical and lysate use of crabs is a $150 million industry, according to U.S. Fish and Wildlife Service estimates. By New Jersey regulation, bled crabs must be returned to the water, yet mortality is estimated at 7 to 10 percent. Lysate collection and bleeding facilities are located at a number of locations on the Atlantic coast. Some crabs are bled locally on Delaware Bay, but a loophole in the regulations allows crabs caught in New Jersey to be trucked to Massachusetts, bled, and released there. The crabs may not die, but they are forever removed from the ecological picture on Delaware Bay. Niles's plan is brilliantly simple. "The biomedical companies mostly use their own staffs to collect crabs. We've asked that the lysate industry buy from the bait crabbers. That keeps everybody working." Another proposal is also basic—if mortality is 10 percent and many crabs are removed from the bay anyway, it would make sense to require the bait industry to get bled crabs from the lysate industry. In this way, the crabs would be used twice,

At Delaware Bay, horseshoe crabs are harvested by the pickup-truck load (above) to use as bait for eels and conches. This has already had a devastating effect on the crabs as well as the migrating shorebirds that depend on them.

A TIMELESS CONNECTION WHOSE TIME IS UP?

The horseshoe crab (*Limulus polyphemus*) is one of the world's most ancient creatures, unchanged for more than 350 million years. Actually not a crab at all, it is closely related to spiders. Although horseshoe crabs are found from Maine to Mexico, the largest concentrations in the world by far occur near Delaware Bay. At 9 to 12 years old, horseshoe crabs are mature enough to breed and so migrate from deeper waters to the beaches of Delaware Bay. Here, from late April or early May through June on the full and new moon highest tides, they deposit eggs at the high tide line. The larger female drags the attached male to the nest site. She digs a shallow nest and deposits about 4,000 blue-green eggs, which are fertilized by the accompanying male. She makes a number of trips to the beach, depositing as many as 20,000 eggs each spring. Many crabs are upended by waves and stranded when the tide recedes, and many die of desiccation. Horseshoe crabs play an important yet little-understood role in the near-shore ecology and food web of the Delaware Estuary.

Laughing Gulls and shorebirds descend on the spawning horseshoe crabs to feed on their eggs at Delaware Bay (above). The shorebird concentrations there are the second largest in North America, surpassed only by Alaska's Copper River Delta.

The bounty of the horseshoe crab eggs in May attracts thousands of gulls and, in the 1980s, an estimated 1.5 million shorebirds to the beaches of the Delaware Bay. The Delaware Bay shorebird concentrations are the second largest in North America, surpassed only by the spring gatherings on the Copper River Delta in Alaska. Twenty species of shorebirds have been known to take advantage of the crab egg food supply, but the principal species are the Red Knot, Ruddy Turnstone, Sanderling, Dunlin, and Semipalmated Sandpiper.

The Red Knots may have flown more than 4,000 miles nonstop, up to 60 hours in the air, from South America to the shores of Delaware Bay. They arrive with no fat reserves, some literally starving, but their arrival is timed to coincide with the peak of horseshoe crab activity. After feeding for two to three weeks, they fly nonstop the rest of the way to their Arctic tundra breeding grounds north of Hudson Bay. Researchers estimate that at least 80 percent of the East Coast race of Red Knot (*Calidris cautus rufa*) stop off at Delaware Bay in spring to "refuel." The feeding shorebirds, in most cases, need to regain 50 percent of their body weight to make the next leg of their journey and to arrive in the Arctic in breeding condition. Red Knots need to gain a minimum of 6.5 grams in body weight per day for 12 to 14 days, the equivalent of about 18,000 horseshoe crab eggs per bird per day, or some 13 billion eggs to support the current number of Red Knots. This requires nearly 1.5 million female crabs to sustain the knot population alone. Red Knots have declined from a high of 95,000 in 1989 to fewer than 32,000 in 2002. More than 500,000 crabs were harvested from the Delaware Bay in 2001, and about 280,000 in 2002. The quota for 2003 has been set at 150,000 horseshoe crabs. There has been a 10-fold decrease in crab egg density on Delaware Bay beaches since 1990.

Is there any way we can preserve this age-old phenomenon? Taking swift action now to stop overharvesting is the only hope for saving this vital population of horseshoe crabs and the birds that depend on them.

saving half. "Simple solutions can seem so hard to work out, but if we could bring the lysate industry on board, we could probably find solutions fast," says Niles.

Although the outlook still remains grim, some key victories have taken place. The NJAS has made horseshoe crab protection its highest conservation priority and has led a full-court press to guarantee that the crab and bird connection will continue. Partnering with the National Audubon Society, American Bird Conservancy, Defenders of Wildlife, and many others, the group is putting pressure on the National Marine Fisheries Service (NMFS) to act. In March 2001, NMFS established a 1,500-square-mile horseshoe crab sanctuary off the mouth of Delaware Bay. Crab harvest there is now prohibited year-round by any method. The area is a key wintering area for horseshoe crabs. In February 2002, New Jersey and Delaware officials closed all of Delaware Bay to horseshoe crab harvest between May 1 and June 7 each year, the peak time for spawning crabs and shorebird use. Finally in March 2003, after the New Jersey Marine Fisheries Council failed to act, the New Jersey Environmental Commissioner announced an emergency rule that would cut the state's crab harvest in half. Quotas for 2003 were set at 150,000 horseshoe crabs, a 50 percent reduction from the 2002 harvest. (Delaware quickly followed suit but crabbers successfully overturned it in court.) Although touted as a victory for conservation, many feel these measures are not enough. "We're still calling for a complete and immediate moratorium on horseshoe crab take," says Eric Stiles. "The science calling for immediate action is compelling. Despite *all* past actions by the coastal states, reported crab harvest went up by 25 percent in 2002—to 1.3 million crabs coastwide. Nothing short of a moratorium will work."

New Jersey Audubon, along with the American Littoral Society, Sierra Club, Delaware Riverkeeper, and the New Jersey Endangered and Nongame Species Program, is asking for a complete moratorium until a sound management plan and a solid Atlantic Coast horseshoe crab stock assessment are completed. "We just don't have a clear picture of the crab stocks," says Stiles. "We think the science we *have* done sounds a crystal-clear alarm call, but we need hard science that nobody can find fault with." Cooperation among fisheries interests and conservation interests has been tenuous at best. "The request for a moratorium has fallen on deaf ears. Unfortunately, there is no voice for bird conservation or ecotourism interests on the New Jersey Marine Fisheries Council," says Stiles. "This council regulates the fishing industry but fails to adequately consider broader ecological or economic interests."

"Agencies are adverse to new tools, and certainly to new constituencies," says Paul Kerlinger, former CMBO director and architect of the original Cape May County ecotourism study. "Ecotourism still hasn't really caught on, at least not to the degree that it can compete with 'standard' businesses and attitudes. Fishing is a business and is embedded with the local government, builders, and even the chamber of commerce. That's the group that controls the economy—and they still distrust ecotourism, even with the proven higher dollar figures (compared with the crab harvest). Fishermen have a powerful lobby, which environmentalists still don't have. This goes back to the old argument that birders don't have to buy permits or pay license fees. Agencies will always be beholden to the interests that pay for their program, even if there *are* many more birders than crabbers. Fishermen pay license fees, sport and commercial, and that's where their power comes from," explains Kerlinger.

Horseshoe crabs are vital to the health care industry. The lysate (above) derived from horseshoe crab blood is currently the only means for testing the purity of injectable medicines and for detecting spinal meningitis and several other human diseases. The crabs used for this are released after being bled.

Delaware Bay resident and active conservationist Jane Galetto has a unique perspective on the controversy. As an appointed member of the New Jersey Fish and Game Council, she witnesses firsthand the conflicting interests and disharmony of the horseshoe crab subcommittee deliberations. However, as chair of the Endangered and Nongame Species Advisory Committee, she watches Larry Niles and his staff engaged in their pressing research and conservation efforts for Red Knots and other shorebirds. And as a member of New Jersey Audubon Society's board of directors, she guides and supports Eric Stiles's determined efforts to protect the crabs. "I just can't believe that after all we've learned, we're still using a cornerstone of the medical industry for *bait!*" she says. "We're not just talking birding and fishing economics here. We're talking about human health as well as the extinction of a species. And we're grinding them up for bait. It's now or never. Horseshoe crabs may have been around for 350 million years, but it's come down to us to do the right thing, and do it now. It's on our watch." ■

Clay Sutton is an author, naturalist, and bird-tour leader living near Cape May, New Jersey, within earshot of the declining clamor of Laughing Gulls on Delaware Bay.

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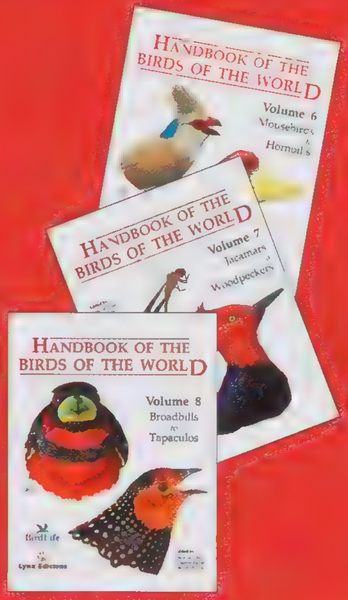

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In the Field

FLYING SUBMARINES?

by Jack Connor

Of all animals, cormorants seem to have the best claim to being equally adept in air and water

Are you old enough to remember the flying submarines of comic books and sci-fi movies of the 1950s and '60s? Did you, like me, think that a flying sub would be the coolest thing any action hero—or adolescent wannabe—could ever hope to own? Just think how the bad guys could never escape, no matter where they tried to go! And even better, imagine how impressed all the 7th-grade girls would be when you buzzed the school to get everyone's attention and then dropped from sight into the nearest lake?

Twentieth-century technology produced dozens of gadgets sci-fi writers failed to predict—from the Hubble space telescope to luxury automobiles with GPS units—but the century ended without the creation of a flying submarine (or a submersible airplane), and it's a reasonable bet the 21st century will also. What goes up does not go down—or at least does not go down very well. The aerodynamics of flight and the hydrodynamics of submersion run counter to one another. In the sky, light bodies and wide wings do best; in the depths heavy bodies and stubby wings generally prevail.

Even natural selection, for all its apparent ability to build creatures for every conceivable niche on the planet, seems to have been hard-pressed to create a genuine flying submarine. Flying fish should really be called gliding fish, because their "flights" are short and low. Flying frogs might be better called falling frogs; their "flights" are really nothing more than controlled descents. And none of the world's mammals comes close to living in both realms. A swimming bat? A flying walrus?

Which brings us, of course, to birds. Only birds can claim real success in both sea and sky, and even here we see physics tugging in opposite directions. A ranking of the world's most familiar seabirds by their swimming abilities (from best to worst) might look something like this: penguins, auks, loons, grebes, cormorants, diving ducks, dabbling ducks, gulls, terns. To rank these groups by their flying abilities, simply reverse the order. Terns fly better than gulls, gulls better than dabbling ducks, dabbling ducks better than diving ducks, and so on. In other words, the better the swimmer, the worse the flyer, and vice versa.

Heavy-boned and stubby-winged, Emperor Penguins reportedly can dive to 700 feet and remain underwater for up to 9 minutes at a time, but of course, like all penguins, they cannot fly at all. Arctic Terns, at the opposite end of the seabird spectrum, fly with such ease that they migrate tens of thousands of miles each year. When they stop to rest over open water along the way, however, they must land on flotsam; like most terns, they do not swim.

Of all the world's animals, cormorants seem to me to have the best claim to being equally adept in air and water and so can make the best claim to being the natural world's best flying submarines. Loons (and grebes) swim and dive better than cormorants—loons can descend to 200 feet or more, apparently about twice as deep as cormorants—but they don't fly as easily

CLIFF BEITTEL

"As anyone who has ever watched a cormorant knows, they spend a lot of time in 'spread-wing' position, apparently drying their wings in the sun."

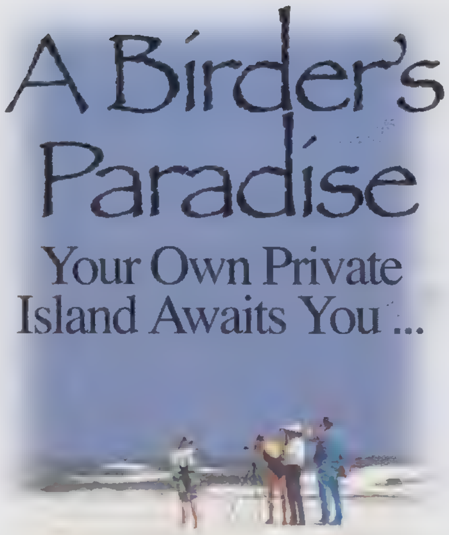
or as often. Find a loon on a lake or river near your house and you will likely see it there for the next few days or even the next several weeks. Getting airborne and staying up are so energetically costly for loons that they are generally seen in flight only during migration. More often, they move from one place to another by swimming. Cormorants are just as likely to fly as swim from one end of a lake to the other. In fact, find a cormorant on a river or lake near your house and you will probably see it fly several times within your first hour of observation. Clearly, flying is less costly for them than for loons, grebes, or the other birds that can swim better.

Among ducks, the mergansers seem to be the cormorants' closest ecological competitors. They too chase fish (and crustaceans) under water and they swim and dive well. The next time you come upon a mixed group of mergs and cormorants, however, watch for some subtle differences in their behavior. Mergansers ride lower in the water than most ducks, but not nearly as low as cormorants, and you can see mergs fight that extra buoyancy at the instant they dive—when they generally drive forward with a little hop, apparently needing that extra momentum for a quick descent. Cormorants go down with less apparent effort, dive more frequently, and can stay under longer. A student of mine, Mike Shanahan, conducted a neat little research project on the campus lake a few years ago, timing the dives of Double-crested Cormorants and Hooded Mergansers. He found one expected outcome: cormorants' dives average longer (about 14 seconds on our shallow lake versus the 11-second average for the mergansers). And he also found several not-so-evident differences. Cormorants' dive times ranged more widely—from short dives lasting only 2 to 3 seconds to longer ones, apparently up to 40 seconds. Cormorants also seem more flexible in their swimming methods than mergansers are—often moving through water so shallow that their fishing seems like "they are almost dabbling," especially while accompanying Snowy Egrets in fish-herding efforts.

"Wettable feathers" are perhaps the key adaptation that enables cormorants to succeed so well in their two different elements. The bones of penguins and loons make them permanently heavy; the water-resistant feathers of ducks and gulls make them permanently light and buoyant. Cormorants have evolved a trick that enables them to have it both ways—by changing their bouyancy as circumstances dictate. The microscopic structure of the feathers—with fewer hooklets and oddly-spaced barbules—enable them to absorb water and so make the birds temporarily less bouyant. Diving deep and staying down is easier when the plumage is soaking wet. Cormorants can fly with wet wings, but as anyone who has ever watched a cormorant knows, they spend a lot of time in "spread-wing" position, apparently drying their wings in the sun. Almost certainly, flight is cheaper and easier on dry wings.

Some have suggested that wing-spreading is done for thermoregulation—warming the birds in cold weather—but recent research seems to support the theory that at least for cormorants the purpose of wing-spreading is to dry their feathers. A study of Chilean Imperial Shags (a southern hemisphere representative of the cormorant family) by P. C. Rasmussen and P. S. Humphrey published in *The Wilson Bulletin* in 1988 summarizes the arguments pro and con for both interpretations. The authors conclude that the Imperial Shags, like their northern relatives, the Double-crested Cormorants and other members of the family, spread their wings to dry them. They often preen while doing so, and they do not immediately return to the water after wing-spreading. Other researchers have noted that only the wings absorb water (like ducks and other diving birds, cormorants maintain an insulating layer of trapped air in their body plumage, which is not lost by wetting) and so the difference in weight is less than 5 percent of their total body weight.

Nevertheless, that small difference seems to be key. "A grain in the balance," Darwin wrote, "will determine which individual shall live and which shall die—which variety or species shall increase in number, and which shall decrease, or finally become extinct." ■



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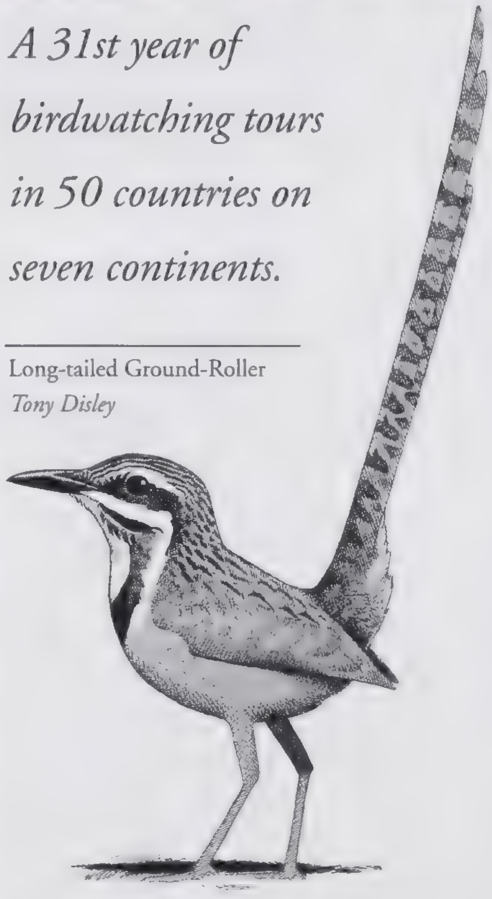

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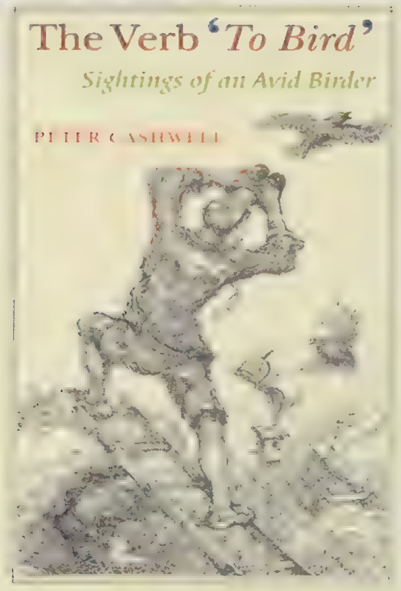

The Verb 'To Bird'

by Peter Cashwell
Philadelphia: Paul Dry Books, 2003

by Allison Childs Wells
and Jeffrey V. Wells

"In grassy country,
a chunky brown bird flushes,
showing a conspicuous patch
of *white*
on each side
of its short wide tail."

Renowned poet William Carlos Williams? No, Roger Tory Peterson, and just one of many reasons why we found Peter Cashwell's new book, *The Verb 'To Bird,'* so engaging. Like many birders who grew up using the Peterson field guide series, Cashwell appreciates Peterson's ability to capture not only a bird's salient field marks, but its very essence. Cashwell goes so far as to put several of Peterson's descriptions into poetic stanzas, writing of his Eastern Meadowlark description, "It's minimal, but complete in its suggestion, like the work of Basho. Indeed, I can envision an entire series of haiku based on Peterson." Peter Cashwell loves language as much as he loves birds and birding, which is why we so enjoyed the book.

With wryness and wit, Cashwell weaves together personal information ("When I'm suffering . . . I'm pretty vocal about it, and I usually manage to inflict a certain degree of misery on those around me") and anecdotes (there's a great passage where his students think he's having an affair with another teacher simply because they go birding together) while winking at literature ("Most people know it's a sin to kill a mockingbird, that what's good for the goose is good for the gander, that ugly ducklings grow up to be swans . . .") and music ("Those of a musical bent may well know that . . . blackbirds are only waiting for this moment to arrive, that all the little birds on Jaybird Street love to hear the robin go *tweet, tweet, tweet,* that Chestnut-brown Canaries and Ruby-throated Sparrows would sing a song, not be long, and thrill you to the marrow—if only they existed").

Cashwell has the power to write with great beauty and poetry, as when he is showing his wife a Great Horned Owl on a December night: "She stood in the darkness looking at a bird-shaped shadow that was doing nothing more than hooting, and by doing so both gave a present to me and received a present from me.") But he always comes back around to remind you that he's an average Joe, albeit one who loves birds. Who hasn't wondered about the names of some of our most familiar and beloved birds? Cashwell writes, "You can tell by the name that there is some kind of entertainment value in watching something called a Killdeer, if only to find out whether or not it can kill a deer, and if so, whether it will eat it, and if so, how." Family folk ourselves now, we appreciated how Cashwell integrates birding with "family time." In the middle of his chapter entitled "Schieffelin's Starlings," he recounts the story of the time he first came to respect the flying abilities of starlings—in the middle of his son's teeball game. "In truth I should have been enjoying the sight of my son playing teeball, a variant of baseball for kids too young to handle the difficulties of the real game, but my attention had wandered. I noticed a number of birds soaring over the diamond, nabbing insects in mid-flight."

As we read, we found ourselves remarking that reading *The Verb 'To Bird'* was a bit like going birding: you never know what you might find or where you may go. Cashwell's passage on how the Northern Cardinal came to be so named wends through American history, sociology, broken copy machines at the Library of Congress, the gargantuan size of John James Audubon's original *Birds of America* ("Coffee tables must have cowered in terror at the mere mention of Audubon's name"), and ends in the Orange County Public Library, where he finds the answer in an unexpected volume. We enjoyed the experience much the same way we enjoy birding. ■

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Sedge Wren © Lang Elliott

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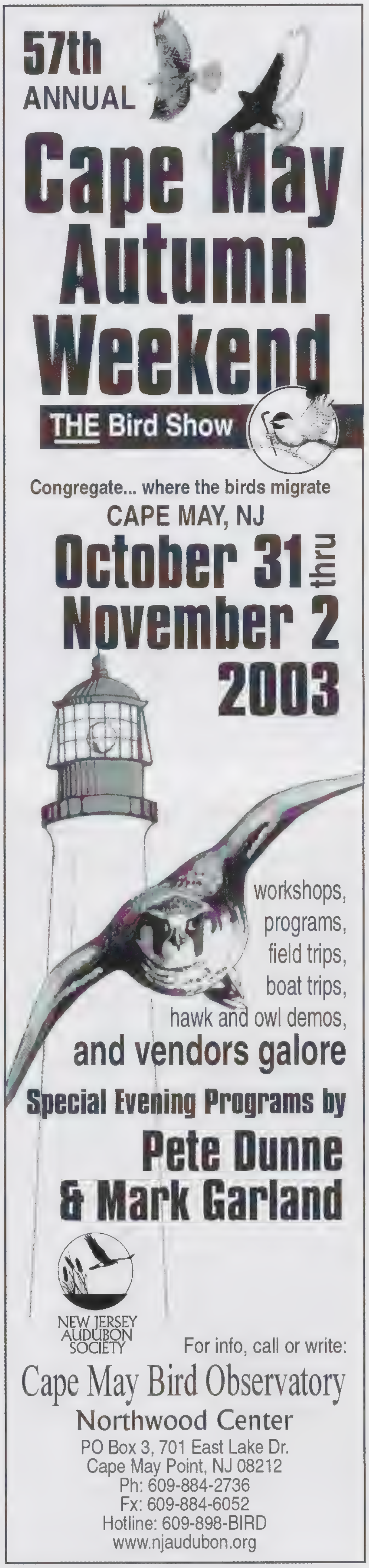
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TRASH BIRDS

by Pete Dunne

"Where I come from, that's a *trash bird,*" the man said, rolling his eyes. Now, I know what he meant. And chances are you know what he meant. But that doesn't mean that the expression "trash bird" is not open to interpretation. For instance, last winter I went on a gull outing to an area on the banks of the Delaware River, across from a landfill so spacious it spans zip codes and so towering it merits contour lines on a geologic survey map.

There were tens of thousands of gulls. Notables included half a hundred Lesser Black-backed, a dozen Iceland, three Glaucous (including one stunning adult), and at least one very defensible Thayer's gull. And every one of them was a certifiable trash bird—if trash bird and garbage bird are synonymous.

Open landfills are often the source of another apt application of the term "trash bird," this one relating not to orientation but to adornment. If you've spent any time watching gulls, you have probably had the sad experience of seeing a bird with a six-pack holder or some other unwanted item affixed around its neck. My life Glaucous Gull was wearing a sardine can on one foot.

On another occasion, an urgent plea for aid from a local golf course groundskeeper about a Canada Goose and an offending six-pack holder led not only to the trash bird but to a Greater White-fronted Goose (Greenland race)—the very antithesis of a trash bird in Northern New Jersey.

Although you and I, as caring individuals, might wish that birds and trash never mixed, a whole host of birds clearly has other ideas. It is a rare robin nest that doesn't have some bit of discarded paper tucked in with the adobe, and Great Crested Flycatchers are as likely as not to substitute shed plastic for shed snake skins. I've seen some Osprey nests that could have served as the screen set for the old TV sitcom, "Sanford and Son," nests whose collection of junk included beach chair webbing, plastic shovels, shotgun shells, fish nets—all manner of things that our species considers trash and Ospreys consider decorative treasure.

You think this is deplorable, don't you? In fact, it's even worse. There are documented cases of young Ospreys strangling in the fishing line or nets that their parents brought into the nest.

But let's consider the male Satin Bowerbird—a blue-eyed, crow-sized species that advertises his worthiness by building an elaborate teepee (or bower) and then decorating the interior with artifacts that capture the color of his eye in hopes of catching a female's attention.

I've seen just one Satin Bowerbird bower. It was a dandy. What I remember most was not the structure but the treasures housed within. There, nicely arrayed within the bower, was a seductive stash whose principle treasure was a collection of blue tops from old Bic pens (whose color perfectly matched that of a Satin Bowerbird's eye).

The pen tops were probably lost or discarded. But can you imagine the consternation of some poor lodge employee who could not figure out why pen tops kept disappearing from his or her desk?

And last but certainly not least are the trash birds that are wholly the former and none of the latter. I'm talking about all those tantalizing objects that under the catalytic influence of distance, heat waves, and wishful thinking assume avian form.

I just drove back from Missouri nonstop. One of the ways I stay sane (and entertained) on long drives is to count the Red-tailed Hawks along the highways. I'm chagrined to admit that on this most recent trip, three eminently countable red-tails proved to be white plastic bags lodged in trees.

And no one will ever know how many plastic milk jugs have been transformed into Snowy Owls on how many beaches. I've done it a dozen times, but I have also figured out how to tell the difference between a real owl and a pseudo owl. One trash birder to another, I pass this wisdom on to you. What I do is search for the closest Herring Gull and gauge how close it is standing to my possible owl. If the nearest gull is over 100 yards away, it might well be an owl. But if there's a gull in close proximity, chances are my "owl" is just another trash bird. ■

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Cornell Laboratory of Ornithology

Our Mission:
To interpret and conserve the earth's
biological diversity through research, education,
and citizen science focused on birds.

LIVING BIRD

AUTUMN 2003 VOLUME 22 NUMBER 4

GREETINGS FROM SAPSUCKER WOODS

June 2003 will long be remembered at the Lab of Ornithology. During that exciting month we held a series of events to inaugurate our brand-new facility: the Imogene Powers Johnson Center for Birds and Biodiversity. My favorite event took place on Saturday, June 21, when we rolled out the red carpet for our members and friends.

Nearly 3,000 people took us up on our invitation to take a behind-the-scenes peek at where we work. They went into our sound studios to see how our technicians archive animal recordings and create tapes and CDs. They watched the sight-and-sound presentation in our new auditorium, and they were miraculously transported to Hawaii, experiencing the richness of its habitats and birdlife, in our Bartels Family Multimedia Theater. They gazed at the fabulous panorama of bird paintings in our reborn Fuertes Room. They walked through our museum, which now houses Cornell University's entire vertebrate collection—birds, fishes, reptiles, amphibians, and mammals. In our DNA lab, they learned how our researchers are exploring the genetic makeup of birds and other animals and using the information to answer challenging questions about evolution and the relationships among species.

In celebration of our new facility, we're publishing this special issue of *Living Bird.* Reading it will give you a fuller idea of the many programs and projects underway at the Lab of Ornithology.

If you're ever in the Ithaca, New York, area, I hope you'll stop by and visit our new home in Sapsucker Woods. Your ongoing support made it all possible.

Tim Gallagher
Editor-in-Chief

Cover: An adult Yellow-bellied Sapsucker (longtime mascot of the Lab of Ornithology) shares a sap well with one of its young. Famed bird photographer Marie Read took this evocative portrait at a tree behind her home in Freeville, New York, not far from Sapsucker Woods.

Back Cover: This classic oil painting of Blue-winged Teal by Louis Agassiz Fuertes once more graces the walls of the Lab of Ornithology, in the newly reconstructed Fuertes Room—the "Sistine Chapel of birding." All of the paintings and furnishings in this popular room were once part of a mansion owned by Frederick Foster Brewster, who bequeathed them to the Lab.

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From the Director

On June 13, 2003, our staff, board, and founding families were privileged to participate in the dedication of a superb new building for science and education overlooking Sapsucker Woods Pond, the Imogene Powers Johnson Center for Birds and Biodiversity. The event marked a milestone in the history of the Laboratory of Ornithology, an institute that originated in 1915 when the young Arthur Allen, new professor in the Department of Entomology and Limnology, coined the phrase to describe his lab in McGraw Hall on the Cornell campus. The Lab became a recognized administrative unit at Cornell in 1956 when it moved into a humble brick observatory overlooking Sapsucker Woods Pond. Funds for the property and building had been given by Lyman K. Stuart in appreciation for Allen's long dedication to involving amateurs in ornithology.

For nearly 50 years, the Stuart Observatory served as a crucible for many historic firsts in ornithology—photography of diving grebes in a water tank (by Arthur Allen and his son, David); development of a Library of Natural Sounds and production of the classic, *Field Guide to the Songs and Calls of Eastern North American Birds* (Peter Paul Kellogg); creation of the first home study course in bird biology (Olin Sewell Pettingill); demonstration of "blending inheritance" in the courtship displays of lovebirds (William Dilger); discovery of male parental care among the tinamous (Douglas Lancaster); rearing and wild release of Peregrine Falcons as a strategy for recovering endangered species (Tom Cade); captive breeding of Whooping Cranes and founding of the International Crane Foundation (George Archibald); experimental proof of the perception of magnetic fields by homing pigeons (Charles Walcott); use of acoustic recordings as a conservation tool (Christopher Clark); demonstration of the scientific and educational validity of citizen-generated data and coining of the now popular term "citizen science" (Richard Bonney and Greg Butcher)—to name just a few.

By the late 1990s, the Stuart Observatory had grown old and limiting. Inadequate for a diversifying staff conducting cutting-edge research, it was also impractical as an education center for students and the public. Our capital campaign for a new home yielded donations from 1,000 people. Every gift was significant, but one deserves special recognition. The S. C. Johnson Company, its retiring CEO Sam Johnson, and his four offspring (Curt, Helen, Fisk, and Winnie) pledged the crucial lead gift for our campaign. They sought a fitting tribute to Imogene Powers Johnson, who besides being a loving wife and mother has been a steadfast friend and supporter of the Lab of Ornithology for more than 25 years. Gene, a devoted citizen scientist, counts mathematics, astronomy, art, architecture, birds, and

JON REIS (2)

bogs among her many loves. We could not imagine a more fitting name than Gene's to grace the front of a science building at Cornell dedicated to birds and biodiversity.

We challenged architect Alan Chimacoff to create a building with the highest values in both design and function. In partnership with colleagues on campus, we incorporated state-of-the-art facilities for housing Cornell's extraordinary vertebrate collections, including 38,000 bird specimens. We recreated the teak-paneled room displaying our hallmark oil paintings by Louis Agassiz Fuertes, and with support from the National Science Foundation designed interactive displays in the building's public space. Slowly, a genuine masterpiece emerged just inches outside our windows.

The new center for birds and biodiversity is named for Imogene Powers Johnson (above), a member of the Lab's administrative board and a longtime friend.

By April 2003 we were paying final calls on the beloved but worn-out little building where the modern Lab of Ornithology had begun. The Stuart Observatory was retired, and in its place now grows a vibrant wetland landscape.

The Cornell Laboratory of Ornithology today is the world's foremost center for the study, appreciation, and conservation of birds. Our staff of nearly 150 includes 25 Ph.D. scientists and an equal number of master's degree professionals, all dedicated to interpreting and conserving biological diversity. We interact with Cornell undergraduate and graduate students, campus colleagues, visiting professionals, agency biologists, conservationists, teachers, and tens of thousands of interested public citizens. We are convinced that scientific understanding is essential for the long-term protection of birds and their habitats, and that engaging citizens opens vast opportunities for new discoveries, both scientific and personal.

A hallmark of the Lab is technical innovation in the service of science, education, and conservation. Our famous Macaulay Library is converting to fully digital format for efficient storage and Internet distribution of sounds and videos. We have acquired two outstanding natural history video collections, allowing us to incorporate video images of nearly 3,000 bird species into our scientific archives, educational products, and web sites. These resources also provide raw materials for superb surround-sound productions featured in our Bartels Family Multimedia Theater. We recently began incorporating our sound and video collections into the revolutionary new National Science Digital Library. Our Internet projects continue to win awards—explore them at <www.birds.cornell.edu>. Our Bioacoustics group routinely "pushes the envelope" to invent new ways to detect, track, and census the world's most elusive bird and mammal species. Current ventures include miniature FM radio devices for tracking macaws and large mammals in the Peruvian Amazon, and unmanned balloon flights over Fort Hood, Texas, to record Black-capped Vireos.

From composing management guidelines for Cerulean Warblers or thrushes, to studying the effects of West Nile virus on our backyard birds, to implementing hands-on learning curricula for inner-city science classes, the Lab of Ornithology holds dear the conviction that birds are nature's most enjoyable and accessible window into how she works. We hope you enjoy this special issue of *Living Bird*, featuring photographs of our lovely new home and brief descriptions of a few of our programs. Thanks to you, the Lab's scope has never been broader. We greatly appreciate your support and invite you to pay a visit to our new meeting place for science and education at Sapsucker Woods.

John W. Fitzpatrick
Louis Agassiz Fuertes Director

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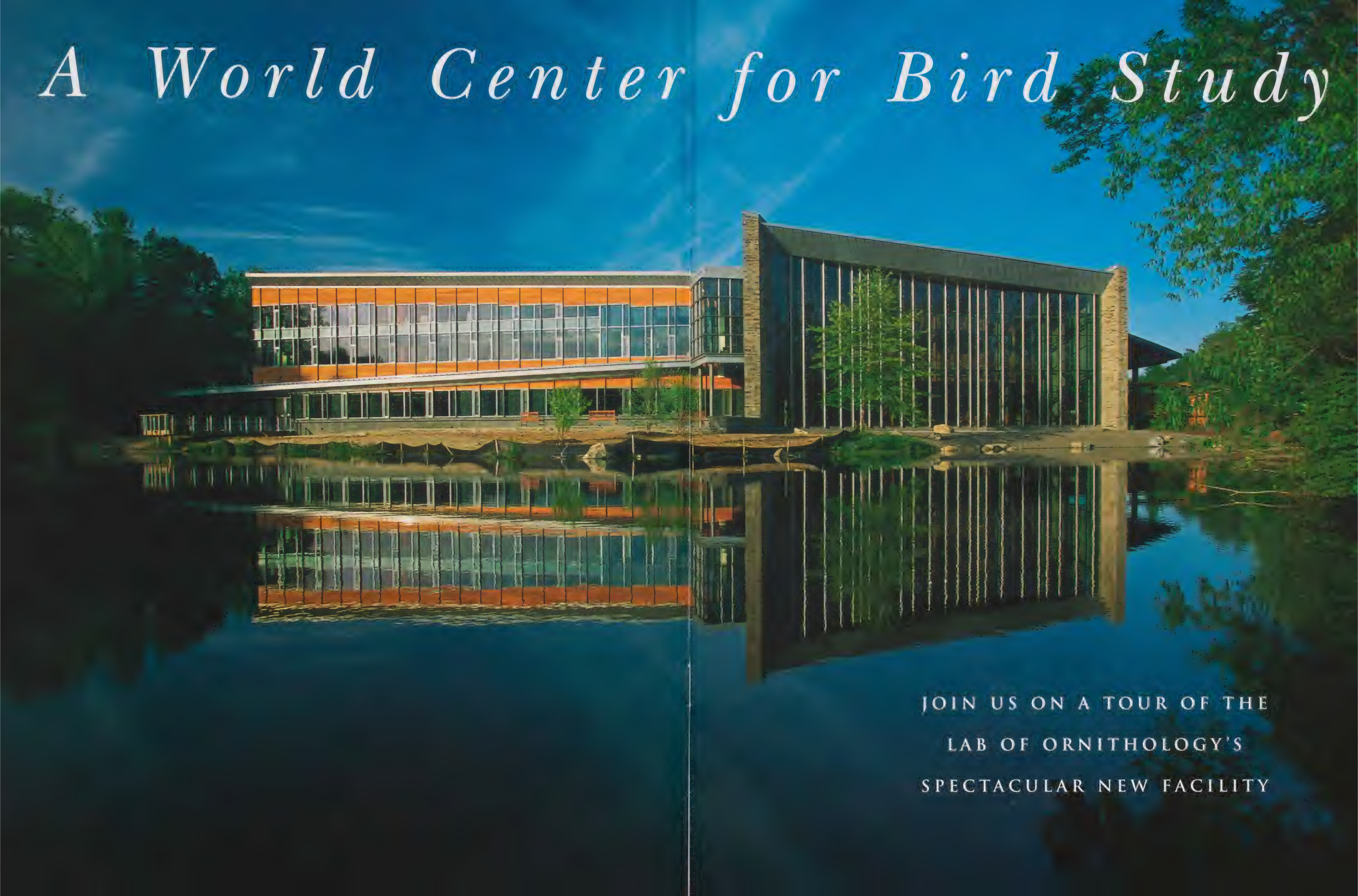

JOIN US ON A TOUR OF THE
LAB OF ORNITHOLOGY'S
SPECTACULAR NEW FACILITY

BHL

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BY TIM GALLAGHER

We are finally all moved in at the Imogene Powers Johnson Center for Birds and Biodiversity, and it's still hard to believe. The completion of this building represents the culmination of a five-year effort to design, raise funds for, and construct the ideal ornithological research institute at Sapsucker Woods. Under the tireless leadership of Lab director John Fitzpatrick and an active, enthusiastic administrative board, the project took off like a rocket and nothing could stop it.

When I came here 13 years ago, the Lab of Ornithology was tiny. We had a handful of programs and fewer than 50 employees, housed in a low-slung 1950s-style cinderblock building and a couple of single-wide mobile office trailers. We were all fond of that place, but it had long outlived its usefulness in terms of size and function.

The Johnson Center has roughly five times the square footage as the original facility, but it's arranged to minimize its impact on the environment, both physically and aesthetically. Unlike the old one-story building, the Johnson Center has two full stories, plus a third-floor mezzanine, which houses our Information Technologies group.

I remember the day the architects from Hillier gathered the Lab staff together in the old Fuertes Room. Over a breakfast of muffins, bagels, and coffee, we discussed our personal visions of what the ideal Lab of Ornithology would look like. The architects showed us numerous pictures of other buildings, and we talked about their individual merits and shortcomings. Gradually, we selected bits and pieces from each, pointing out things we liked and disliked. We sought to create a research institute for the 21st century, capable of using the best new technologies to further the study and conservation of birds.

One of the important things we did was to provide a new home for the massive Cornell University Museum of Vertebrates, which had been in "temporary" quarters for some 30 years in an aging cinderblock building near the airport. The collections—which include fishes, reptiles, amphibians, mammals, and, of course, birds—are now an amazing resource for Lab staff, Cornell researchers, students, and visitors from around the world. We also added an Evolutionary Biology program with a complete DNA lab and significantly boosted the workspace of the Macaulay Library, the Bioacoustics Research Program, and other Lab programs. And our thousands of ornithological books and journals finally have the home they deserve in the Adelson Library.

We are particularly pleased with the reconstruction of the Fuertes Room. This room was originally the personal library of Frederick Foster Brewster, in his New Haven, Connecticut, mansion. He had commissioned famed bird artist Louis Agassiz Fuertes in 1909 to design the teak-paneled library and complete a series of oil paintings that would wrap around the room. He left the entire contents of the library to the Lab in his will, and it was reconstructed in the old Lab building in 1968, complete with the teak walls, glassed-in bookcases, and paintings. I'm happy to report that this second reconstruction of Brewster's library is a great improvement and much closer to the original.

We had considered at one point constructing a series of smaller buildings, spread out in a campus-like setting, but we opted instead to create one large building to house all of our programs and staff. The idea was to bring people from a diversity of fields together in one building and see what kinds of interesting discussions and collaborations might develop. The Johnson Center houses an amazingly varied group of people. We have world-renowned scientists studying everything from birds to bats, whales, elephants, fish, and snakes. We have engineers striving to develop more effective ways to record, analyze, and use wildlife sound recordings to study behavior and to census populations. We have computer programmers working to stretch the capabilities of Internet technology to gather data on birds.

In the staff lounge, strategically placed in one of the best birding locations, an expert on bird vocalizations might have lunch with one person who studies rattlesnakes, another who studies catfish, and another who is developing high-performance computer applications for wildlife research. The ensuing discussions and cross-fertilizations can only boost the effectiveness of the research in all of these fields. The Lab of Ornithology is about creating synergies—developing connections across disciplines to provide a fertile environment for innovation and discovery. The Lab has become a great magnet for Cornell students, both undergraduate and graduate, which also adds to the rich intellectual mix.

In the pages that follow, we want to provide an inside look at the Lab of Ornithology, its beautiful new building, and the many wonderful programs going on inside. ■

JON REIS (PREVIOUS TWO PAGES)

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Visitors Welcome!

BY ALLISON CHILDS WELLS

The Lab's new visitors' center offers a host of interactive displays as well as sound and visual programs to teach visitors about birds

Nestled beside the 10-acre wildlife pond at Sapsucker Woods Sanctuary, tucked unobtrusively under a treeline of maples, birches, beeches, and pines, sits the Imogene Powers Johnson Center for Birds and Biodiversity, the new home of the Cornell Lab of Ornithology. Inside the graceful walls, Lab staff are busy analyzing citizen-science data, exploring avian diversity in the DNA laboratory, archiving sounds and images from the natural world, and developing new acoustic monitoring tools. Indeed, the Johnson Center was created to facilitate the Lab's groundbreaking research. But it also houses a first-class visitors' center where you and your family can get a hands-on understanding of this research, and a lot more.

Your experience begins even before you step inside. Moving from the parking lot to the building, the bird-friendly native landscaping and elegant stonework are as welcoming as the grounds of a beloved home, which is

TIM GALLAGHER

A colorful view of the newly expanded wetlands area, including the new boardwalk, from a sanctuary trail in Sapsucker Woods. More than 230 bird species have been recorded along the trails. On the facing page, a young visitor uses an interactive bird kiosk to test her knowledge of local birds, while other visitors enjoy great views of Sapsucker Woods pond and the Treman Bird-feeding Garden through the expansive wall of windows in the Morgens Observatory.

exactly the intent. Trees and wildflowers lead the way from the parking areas to an irresistible pedestrian bridge made of Llenroc stone that reaches through Gogo's Garden, a small pond surrounded by plantings that are inviting to wildlife. It's a nice little spot to stop and ponder the meaning of life or just to wonder what that bird is that's been singing since you got out of the car. The bridge leads to a sprawling stone portico that sets you up for a difficult choice: Should you head out first to the sanctuary trails or wander inside to explore the many exhibits? Either way, you win.

As you enter the Morgens Observatory, located in the visitors' center, you might feel like you're still outdoors. A huge wall of windows overlooks Sapsucker Woods pond, where Belted Kingfishers dive for fish and Great Blue Herons dart their bills into the water for frogs. You can sit in beautifully crafted chairs and watch as Mallards put on a show. An interpretive panel describes what the various behaviors mean. That odd-seeming head-bobbing, for example, may be part of a fascinating mating display. Spotting scopes, donated by Swarovski Optik and Carl Zeiss Optical, are provided near the windows to help you get a better look at the Hooded Merganser at the far edge of the pond.

Bird-feeding enthusiasts will especially enjoy the Treman Bird-feeding Garden, located next to the pond and also visible through the wall of windows. The garden drips with feeders of every type—tube feeders, suet feeders, hummingbird feeders, thistle feeders—and there are always feathered guests enjoying the feast. A panel next to the window shares the secrets of some of the birds that visit the garden. (Why is that nuthatch flying off with a seed? Maybe it's going to cache it under a piece of tree bark to eat later.) And just like the old Lab building, the sounds of the outdoors are broadcast over speakers inside.

JON REIS

Not sure what you're hearing and seeing? Thanks to a generous grant from the National Science Foundation to create interactive exhibits, you can look up the species at the bird identification kiosk. This popular exhibit allows you to choose a category of Sapsucker Woods birds based on the habitat where you

A sound studio, based on those used by the Lab's Macaulay Library staff, invites visitors of all ages to learn about and experiment with sound using Raven, *a software program developed by the Bioacoustics Research Program staff.*

PHYLLIS DAGUE

made a sighting—woods and trails, bird-feeding area, or pond. From there, you can view images and listen to songs and calls of the birds commonly found in those habitats. The exhibit lets you compare species that look alike, view maps of where the birds occur, and read interesting natural history information about each species.

From there, you might step into the Bartels Family Multimedia Theater. Currently, the theater features an eight-minute surround-sound video presentation on the plight of native Hawaiian birds. Soon, you'll be able to choose from a number of science or conservation videos, all of which will feature amazing video footage from the Macaulay Library's growing collection.

One of the most frequently asked questions at the old Lab was, What is it like inside the Macaulay Library sound studios? Now when you visit the Johnson Center, you can find out for yourself. In fact, you'll be able to sit inside a replica of a studio and enjoy some hands-on experience working with sound, using *Raven*, a software program developed by the Lab's Bioacoustics Research Program. You can select a bird song and see how closely you can imitate it by recording your call and playing it back, speed up a recording or slow it down, or make a sonogram. The studio is fun and easy to use—a great way to get your kids hooked on sound and science.

A kiosk just outside the studio lets you sample the collection of natural sounds archived in the Macaulay Library. You can hear cuts from the vast selection of audio guides produced by the Lab and take a quiz that tests your knowledge of which creatures—birds, mammals, amphibians, and other animals—make which sounds. You can even listen to sounds selected by Lab staff and read the personal anecdote behind why each person chose that particular sound.

As you leave the sound studio area, you'll see an exhibit that is familiar to decades of Lab visitors. The collection of hummingbirds from throughout the Americas was a mainstay of the old Lab's visitors' center and continues to be extremely popular. The display is strategically placed so that when light hits the feathers just right, the specimens glow with shimmering, iridescent color. Most people are thrilled to view these gorgeous little creatures, which they had previously seen only in the pages of field guides.

The most important reasons for developing the visitors' center were to make it easy for people to understand the importance of citizen science and to invite them to join our research team. The Lab achieved those goals by creating an Object Theater, located in the visitors' center auditorium. In the Object Theater, you take your seat as the music fades and the lights dim. Soon the room fills with the sounds of singing birds. Up in the front corner, a TV screen lights up, and Lab researchers and other staff appear, talking about various aspects of the Lab's Citizen Science program. Citizen scientists themselves—kids and adults alike—each share their unique perspective. The narrative is complemented with video clips that appear on a big screen in the front of the room as a spotlight shines on objects—a park bench, a kitchen table at a window with a bird feeder outside, a patch of forest, a telephone and notepad—stationed around the front of the room. Twelve minutes later, you leave with a richer understanding about what the Lab does, what citizen science has helped reveal about bird populations, and, we hope, the inspiration to become a citizen scientist yourself.

Although the sights and sounds of the Object Theater fill the room during the show, the setup leaves plenty of space for the Lab's Monday Night Seminars, which are held in the same auditorium. The popular series, which had been put on hold during the move, has now resumed so that scientists, authors, illustrators, photographers, and others can share their knowledge and experiences with other bird enthusiasts.

Adjacent to the auditorium—and part of it when the partition is open—is the famed Fuertes Room, reconstructed here in a nearly exact replica of the original personal library of Frederick Foster Brewster, who donated it from his Connecticut mansion. Original teak woodwork complements the elegant oil paintings of renowned bird artist, Louis Agassiz Fuertes. No wonder the Fuertes Room is known among birders as the "Sistine Chapel of birding."

Just outside the Fuertes Room, an interpretive panel gives an overview of Fuertes himself, one of many interpretive panels placed throughout the observatory. The panels are colorful and lavishly illustrated. They present topics ranging from the meaning of the word"ornithology" and a brief Lab history to a who's-who in the world of sound pioneers.

Visitors are also welcome to visit a portion of the second floor, and ascending the stairs is an experience in itself. The beautiful wooden staircase narrows near the top, creating an elegant effect that is enhanced by exquisite paintings gracing the walls. They are part of the Williams Gallery of Art, which includes works not only by Louis Agassiz Fuertes but by Roger Tory Peterson, John James Audubon, George Miksch Sutton, Francis Lee Jacques, Alan Brooks, Tony Angell, and other well-known artists. You can stop to admire the paintings as you make your way along the hallway around the corner at the top of the stairs toward the Allen Bird Observation Tower. Named for Lab founder Arthur Allen, the tower has affectionately become known as "the treehouse." Although a relatively small space, it is peaceful and strategically located for excellent views into the back side of the pond. Spotting scopes boost your viewing power, and comfy chairs make the treehouse a relaxing place to sit and read.

Next to the treehouse is the Adelson Library, home to thousands of books about birds and other wildlife. The library is part of the Cornell University library system and serves a critical function for Lab staff. Adult visitors are also invited to use this resource. Roomy tables make it easy to conduct your work right in the library. Work stations line a beautiful wall of windows, which afford a nice view of the pond but may make it delightfully difficult to concentrate on your research.

After trying your hand at the exhibits and exploring the splendid visitors' center space, it's time to make your gift purchases at Wild Birds Unlimited at Sapsucker Woods. Although located inside the visitors' center, the store is privately operated. Lab members receive a 10-percent discount on all items in the store, which include audio guides and other Lab products. There are also bird jewelry, clothing, books, and lots of toys for the kids.

Put your purchases in the car, then head out for some birding on the trails. Sapsucker Woods Sanctuary offers more than four miles of well-kept trails that wind through a variety of habitats and across lovely boardwalks. Trails are clearly marked, and benches are provided here and there. Observation platforms placed throughout the sanctuary provide excellent views of the pond. Be sure to bring your binoculars, because more than 230 species of birds have been identified in this 224-acre sanctuary.

The visitors' center is open Monday through Thursday 8:00 A.M. to 5:00 P.M., Friday 8:00 A.M. to 4:00 P.M., Saturday 9:30 A.M. to 4:00 P.M., and Sunday 11:00 A.M. to 4:00 P.M. The trails are open every day, dawn to dusk. Plan on visiting soon! ■

Using real objects, sounds, and video, the Object Theater shows and tells visitors about the Lab's Citizen Science program, explaining what scientists have learned about birds based on citizen-science data and showing ways that anyone with an interest in birds can get involved.

SEAN SERRELL

Building a Network of Citizen Scientists

BY TIM GALLAGHER

The Lab depends on trained volunteers to answer vital questions about birds and their habitats

The Lab has citizen-science projects for every level of expertise, ranging from the relatively simple Project FeederWatch to Birds in Forested Landscapes, designed for more advanced bird watchers. Participants in The Birdhouse Network monitor the breeding success of Eastern Bluebirds (facing page) and other cavity-nesting birds across the continent.

The idea of citizen science—using amateur volunteers to gather data about birds—dates back to the earliest days of the Lab of Ornithology. It was one of the founding principles of this organization and now figures prominently in our mission statement: "To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds." But what is the main purpose of our efforts in citizen science? Do our programs exist to amass large quantities of data about birds across broad geographic areas? Do they serve mostly to educate project participants about the science of bird study? Or does the primary value lie in the army of highly trained volunteers being established across the continent—people who will be ready to help answer new scientific questions and test new hypotheses as they emerge? And what are the ramifications of citizen science for bird conservation?

I pondered these questions recently as I sat in my new office on the second floor of the Johnson Center, gazing out at the trees in Sapsucker Woods. Then, I thought, what better place than here to ask about the purpose and importance of citizen science. Armed with my tape recorder, I walked out my office, turned left, and strolled northward, into the realm of Citizen Science, Conservation Science, and Bird Population Studies. All of these programs are tightly linked in the effort to use volunteers to amass data on birds, as are the Education program (right next door to my office), the Macaulay Library (on the first floor), and the Information Technologies group (perched above me on the mezzanine). Numerous collaborations exist at the Lab, and many come together within the nexus of citizen science. The Education program develops instructional content for our citizen-science projects. The Macaulay Library creates project CDs and cassette tapes, both to teach volunteers the songs and calls of the birds being studied and also to play back at their study sites, where they may elicit a response from a target species. And our Information Technologies group creates interactive web pages that allow project participants to submit and retrieve data from our vast citizen-science database.

One of the first people I passed in the hall was André Dhondt, director of Bird Population Studies. His group analyzes the massive data sets being produced each year by participants in the Lab's citizen-science projects.

"For me, the primary reason for having citizen-science projects is to collect data, followed closely by the educational value to participants, who learn about the process of science," says Dhondt. "One of the phenomenal abilities of the citizen-science approach is the ability to collect data across a huge geographic area that has very different climates and habitats." Instead of having one scientist or a small team of scientists addressing a problem at a handful of study sites, a project might have 1,000 or more trained participants across the continent, each covering several study sites.

"With biology, a lot of times all you need is time, a piece of paper, and a pencil to record data," says Dhondt. "If you do that in the context of a good set of questions you can really do some exciting work."

One example he points to is the Lab's Birds in Forested Landscapes project, which has employed a dedicated group of about 1,000 participants to perform a difficult scientific protocol. The data they gathered have already helped answer some key questions about the habitat needs of forest thrushes, which will be used by the Lab's Conservation Science program to create a set of conservation guidelines to distribute to land managers across North America. But Dhondt and his staff have also been able to use the data to address other vital questions, going beyond the original scope of the project, such as how acid rain is affecting the breeding success of Wood Thrushes. In addition, he has been using citizen-science data to examine the effects of global warming. "We have so much data—all of North America basically—that we can actually look at where the effects of global warming are and to what extent the effects vary across the continent," he says.

PAUL ZIMMERMAN

Ron Rohrbaugh, who heads Citizen Science, was the next program director I encountered. He takes a broad view of the purpose of amateur data collection. "Citizen science sits at a major intersection of science, conservation, and education," he says. "There are not many other projects where people can contribute data that will be used in real scientific investigations. And participants get to see the whole process from start to finish, from data collection to analysis to results, published in *BirdScope* or displayed on the Lab's web site."

The number of people involved in Lab citizen-science projects is amazing. More than 16,000 participants take part in Project FeederWatch alone. Birds in Forested Landscapes and The Birdhouse Network each have roughly 1,000 participants, and a rapidly increasing number of people take part in eBird, the new web-based bird-monitoring project.

"They're collecting data to answer broad-scale biological questions," says Rohrbaugh. "Citizen science has enabled us to accomplish some things that would have been impossible using conventional ecological research methods. For example, in the House Finch Disease Survey, the Bird Population Studies group was able to track the spread of an infectious wildlife disease almost in real time. This is unprecedented."

Rohrbaugh's staff is currently developing two new citizen-science projects. The first, dubbed SOS (Study of Overwinter Survival), will attempt to determine the survival rates of birds during the tough winter months and to see how bird feeding affects their survival. This project will be pilot-tested this winter in the Northeast. The Citizen Science staff also wants to establish a Hummingbird Watch. "Very little data exist on the population status or trends

The recently completed Cerulean Warbler Atlas Project shows how much can be accomplished by citizen scientists. The state of Tennessee used data from the project to successfully push forward a proposal to add 50,000 acres to a wildlife management area.

RON AUSTING

of most hummingbird species," says Rohrbaugh. "They are not well covered by the Breeding Bird Survey or the Christmas Bird Count. FeederWatch is so popular now, we could use a similar protocol for hummingbirds. And because we have 16,000 potential participants in place already across the continent, we are immediately ready to cover an amazingly large geographic area."

Okay, I can see the value of citizen science as a means of collecting massive quantities of data across broad geographic areas over long periods of time, and I understand how effective it is as an educational tool. But how are these citizen-science data put to use in bird conservation? To find out, I next visited Conservation Science director Ken Rosenberg.

"Our role is to translate the citizen-science data into management guidelines—applying the project results to on-the-ground conservation programs," says Rosenberg. "We have five years of Birds in Forested Landscapes data from almost 3,000 study sites, and we're now putting together a set of management guidelines for forest thrushes."

The Lab has already published management guidelines for tanagers, based on data from Project Tanager, an earlier, highly successful citizen-science effort that studied four species of North American tanagers. The guidelines were sent to corporate forest owners, foresters, and federal and state agencies, and proved to be so popular that they had to be reprinted. The Cerulean Warbler Atlas has also been completed and is currently available on the Lab's web site. Rosenberg is particularly pleased with how well the Cerulean Warbler Atlas Project succeeded in its goals.

"When we first started looking at Cerulean Warblers, we didn't even know where they were, how many were out there, and what kinds of habitat they were using," he says. "In just three years we were able to produce this great atlas covering more than 1,000 sites, with populations identified and mapped in every state. Based on our results, the state of Tennessee just bought 50,000 acres to add to a wildlife management area. And at Montezuma National Wildlife Refuge in New York, they're including many acres of forested wetland in their acquisitions that they had previously ignored. These on-the-ground conservation actions are a direct result of our work. Ten years from now, I want to be able to say that our efforts helped stem the decline of the Cerulean Warbler."

In addition to the United States and Canada, the Lab is exporting the citizen-science concept to Latin America. Eduardo Iñigo-Elias, coordinator of the Neotropical Bird Conservation program at the Lab, is developing a bird-monitoring program in Mexico and Cuba. Currently these countries do not have any formal bird-monitoring programs—not even the Breeding Bird Survey or the Christmas Bird Count. This has created a major data gap, both with migratory birds and year-round resident birds, such as Painted Buntings, which live along the United States and Mexico border. "The role of the Lab of Ornithology in Cuba and Mexico would be to help create a capacity for research so they can engage in bird conservation," says Iñigo-Elias.

Some citizen-science projects, such as Aves Urbanas, already have a Spanish-language version and are ready-made to export to Latin America. But Iñigo-Elias would like to see eBird, species atlas projects, and other programs introduced there. "We need to determine the relative abundance, distribution, and population trends of the birds in Mexico," he says. "This is essential before other conservation actions can take place. Then we can move ahead the agenda for creating a strategic plan for bird monitoring and conservation." ■

If you'd like to become a citizen scientist, there are Lab projects for every age, every level of expertise, and every location from pristine wilderness areas to densely populated cities. Every issue of our newsletter, BirdScope, *contains in-depth features and information about our citizen-science projects. To find out more, visit our web site at <www.birds.cornell.edu/citsci> or call (800) 254-BIRD and ask for a Citizen Science brochure.*

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A Museum for the 21st Century

BY MIYOKO CHU

The Cornell University Museum of Vertebrates takes a dynamic new approach to research collections, using a combination of specimens, field observations, video footage, sound recordings, and DNA sequencing to study wildlife

JON REIS (2)

When the Cornell Lab of Ornithology moved into its new home at the Imogene Powers Johnson Center for Birds and Biodiversity, more than a million fish, amphibians, reptiles, birds, and mammals moved in too. For decades, these specimens—belonging to the Cornell University Museum of Vertebrates—had languished in an old cinder-block building about half a mile from the Lab, isolated from the university and lacking such basic facilities as preparation rooms, teaching areas, and space for visiting researchers. The move to the Johnson Center has expanded the museum's facilities in a central hub for research, a fitting place for a museum at the forefront of a dynamic new era in research collections.

For most of the museum's 125-year history, there was no such thing as an audio recorder, a video camcorder, or a DNA sequencing machine. These recent technologies have made it possible to preserve not just an animal's body, but its voice, behaviors, and genetic code. The museum of vertebrates is now on the first floor of the new facility, strategically positioned alongside the Macaulay Library, the world's first multimedia museum of animal behavior; the Bioacoustics Research Program, where engineers develop tools to collect and analyze animal sounds; and the Evolutionary Biology program with its state-of-the-art DNA laboratory. With these resources, researchers can use museum specimens, together with sound recordings, video footage, and DNA samples, to solve questions about the function and diversity of animals. How does a manakin make its love song? How does a catfish pinch and squawk? How did the rattlesnake get its rattle? The answer to these riddles cannot be found without traditional museum specimens, but these specimens alone are not enough to solve them fully.

The room housing the museum's bird collection is filled with large rectangular metal cases lined up wall-to-wall. Altogether, they contain more than 38,000 study skins of birds. Kimberly Bostwick, curator of birds and mammals, studies a family of birds called the manakins. From the case marked Pipridae, she pulls out drawers filled with a dazzling assemblage of manakins from all over Central and South America. But the physical beauty of these birds tells only a portion of their story. In life, the males show off their brilliant finery to females, performing elaborate courtship dances to the rhythmic sounds they produce with their wings.

"What's interesting about these birds is that they don't all make wing sounds in the same way," Bostwick says. Nobody knew that before Bostwick began measuring the wings, feathers, and bones of more than 500 specimens. When a manakin snaps its wings—producing a sound reminiscent of a drop of hot oil on a frying pan—the motion of the wings is just a blur to the human eye. But Bostwick found tremendous differences in the wing feathers,

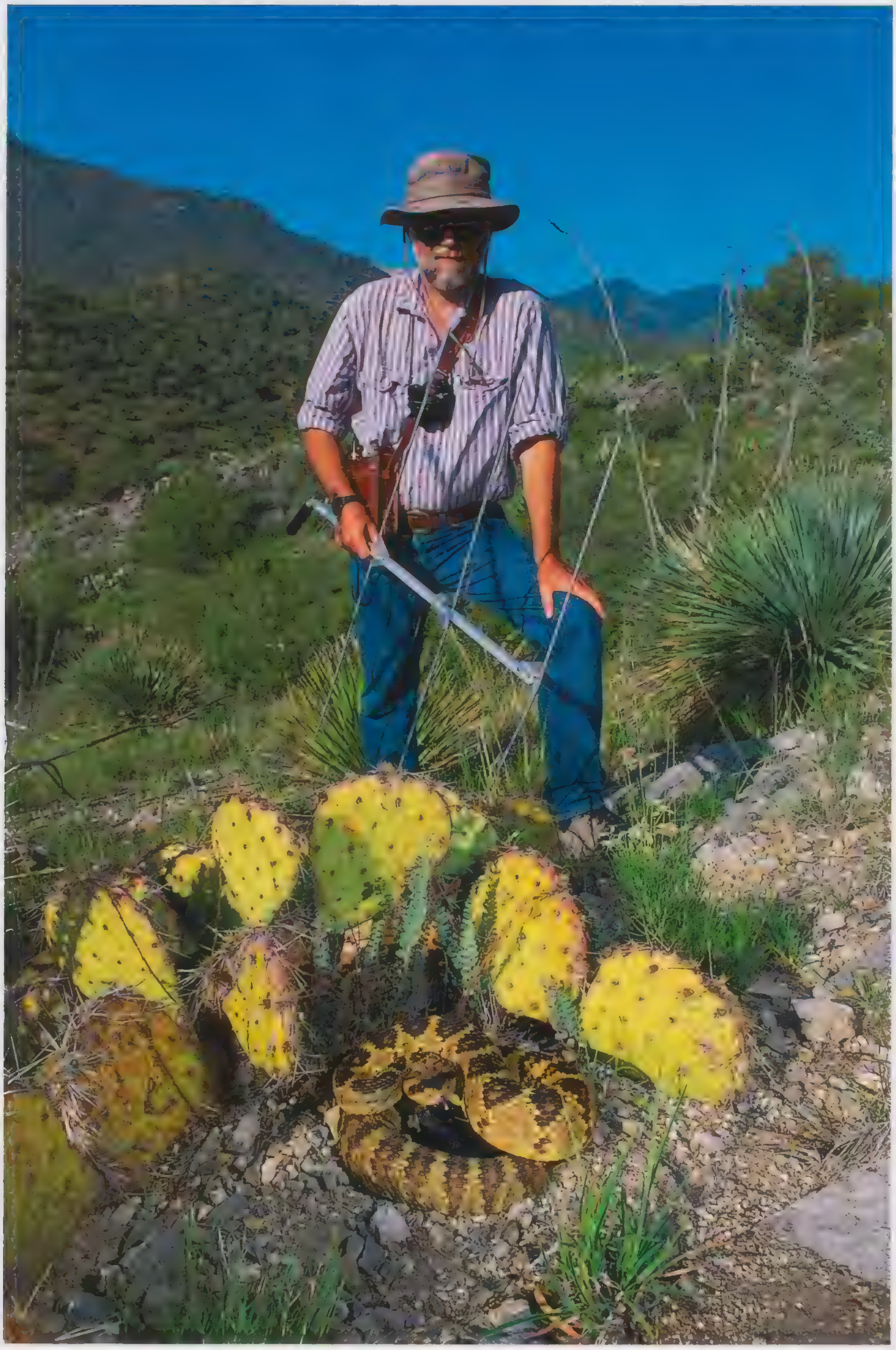
A Club-winged Manakin (left) makes an odd snapping sound with its wings during courtship. To find out how it does it, Kimberly Bostwick (below) studied numerous specimens, audio recordings, and high-speed videos.

muscles, and bones of different manakin species, suggesting that the snap of a male's wings is so fundamental to his success in winning a mate that it takes precedence over his powers of flight. "Manakins have heavier bones and bigger muscles in order to do these courtship displays, at the expense of being able to fly as well as other species," says Bostwick. Additionally, her research hinted that there was more complexity and variation within that blur of wings than anyone had realized before.

There the story might have ended, except for a new invention: the portable high-speed video camera. "There was no way to take high-speed video in the field until recently," Bostwick says. "And without high-speed video, we could never know how any bird makes sounds with its wings." In Ecuador, Bostwick filmed manakins at 1,000 frames per second—a much higher speed than the 30 frames per second of a conventional video camcorder. The footage revealed that different manakin species use entirely different motions to produce similar-sounding snaps.

"Look at this White-collared Manakin," Bostwick says, as she replays the video footage on her computer screen. "Here he is on his court—he's chosen four or five twigs and cleaned a bare patch of ground underneath. When a female comes, he starts leaping among the twigs and making that snapping sound. There he is, jumping up. Now he's whacking his wings above his back. It's just interesting in principle that birds do this. But what's really incredible is where the science comes in. He's doing that as fast as hummingbirds beat their wings." The footage showed that a Red-capped Manakin moves its wings just as quickly to produce a similar sounding snap by beating its wings against its sides. Furthermore, the Red-capped Manakin makes two additional kinds of snaps using completely different wing motions.

Bostwick is continuing her work on the anatomy and behavior of manakins, using the insights she gains to piece together the story of how they evolved the ability to make music with their wings and how different species are related to one another. Meanwhile, the video footage and sounds that she recorded have been deposited in the Macaulay Library so that other researchers will be able to study them well into the future, just as they can study the bones and muscles in the bird collection where some of Bostwick's discoveries began.



MICHAEL AND PATRICIA FOGDEN

Just down the hall from the bird collection are four rooms containing 1.2 million fish specimens stored in vials, jars, and buckets on compact shelving that extends down the length of each room. What are these fish doing in one of the world's largest centers for bird study? John Friel, curator of fishes, amphibians, and reptiles, can answer that question. He, like Bostwick, is interested in the evolution of animals that produce sound; his organisms just happen to have fins instead of wings.

Friel's passion is studying the bones and musculature of fish, using anatomical clues to construct what biologists call evolutionary trees—branching diagrams that show how different species are related to one another. The more he studied the skeletons of catfish, the more he became intrigued with a group of bones called the pectoral girdle—the fin bones and associated structures.

"The densest bone in a catfish's body is the pectoral spine," says Friel, holding up a bone that resembles a delicate jawbone—long, slightly curved, and ridged with jagged teeth. This bone, adjacent to a catfish's front fin rays and extending backward along the body, is unique among vertebrates and highly variable among different catfish species. Some pectoral spines look like a thorny branch, with teeth-like projections on all sides; others look like jawbones, combs, or smooth awls. Additionally, where the base of the spine meets the other bones of the pectoral girdle, there are intricate ridges and bumps that vary greatly among different kinds of catfish.

"The earliest fossil record of a catfish is from a spine like this, from the late Cretaceous, 65 million years ago," Friel says. "They were obviously used for defense. By elevating these spines, they could effectively make themselves bigger. More primitive groups of catfish tend to do that—raise their spines without making noises."

But if you scoop a catfish called the striped Raphael out of the water, you'll hear an odd sound, as if someone is repeatedly running a finger up and down the teeth of a comb. Pick up a banjo catfish, and you'll hear frog-like croaks in doublets: *Uh uh. Uh uh. Uh uh.* Still other catfish sound like chattering squirrels or someone's knuckles rapping on a door. The species that make the most noises tend to be those that can harm a potential predator—especially by pinching, stabbing, or slashing with their pectoral spines or, in some cases, by releasing toxic chemicals from ruptured skin vesicles. No one knows for sure whether catfish squawk as a warning to predators or for some other reason. What is clear is that, as with manakins, the behavioral complexity of catfish is reflected in the marked variability of their sound-producing techniques and the shape of their instruments.

Catfish produce sounds as the base of the pectoral spine rubs against the other bones of the pectoral girdle. When Friel used high-speed video, in combination with sound analysis, he found that some catfish, such as the striped Raphaels, make sounds as they raise and lower their pectoral spines. Others produce sounds only when they raise their spines. Video footage at 500 frames per second revealed that striped Raphaels produced their sounds in a racheting start-and-stop motion that appears like a smooth sweep to the unaided eye. Sonograms show distinct sub-pulses that are produced by the friction of ridges on the surfaces of the bones. By studying the defensive behaviors of catfish, their sounds, and the intricacies of their bones, Friel ultimately hopes to reconstruct the evolution of sound production in catfishes, adding valuable new information to the catfish evolutionary tree.

John Friel (above) combines the study of museum specimens with sound and high-speed video to understand how catfishes evolved the ability to make sounds with their bones. At left, Harry Greene uses radiotelemetry to track a black-tailed rattlesnake in Arizona. Greene is using behavioral observations, museum specimens, and DNA analyses to understand the evolution of the rattle.

JON REIS

Substitute a rattlesnake's rattle for a catfish's spine, and herpetologist Harry Greene is on a similar quest. Next door to Friel's office, Greene stands between compact shelving filled top to bottom with snakes coiled up in jars of alcohol. As a teenager, long before he ever set foot at Cornell, he knew some of these very same specimens intimately. *The Handbook of Snakes of the United States and Canada*, published in 1957, by Albert and Anna Wright, was based on specimens in the collection. "Virtually every animal that was photographed for the book ended up as a specimen in the collection," Greene says. "When I was a teenager, I devoured this book. I literally memorized it because it had such vivid field observations. When I read it, I imagined what it would be like if I could go to Texas and catch a coral snake."

In fact, Greene, did go on to look for coral snakes and other venomous snakes, not only in Texas but around the world, and he used museum specimens to explore the diet of pit vipers and their relatives. Greene is now a professor in Cornell's Department of Ecology and Evolutionary Biology and a faculty curator of the herpetological collection. He and his wife, Kelly Zamudio, also a herpetologist, faculty curator, and professor in the same department, are now studying the evolution of the rattle in rattlesnakes.

Although only rattlesnakes have rattles, all pit vipers have a small spine on their tail—a fact that Greene confirmed by looking at the tail tips of museum specimens from every genus and almost every pit viper species in the world. "That right there shows that the rattle didn't just jump out of nowhere," Greene says. "What we're trying to do now is reconstruct the place, habitat, and body size of the earliest rattlesnakes. Once we do that, we can test different hypotheses about the origin of the rattle."

Their strategy is to construct an evolutionary tree of rattlesnakes using natural history observations, morphological and dietary information from specimens, and DNA analyses. They'll then be able to examine whether the rattles first arose in Great Plains rattlesnakes as a means of warning large ungulates—a widespread assumption that Greene believes is unlikely to be true based on the evidence he's found. An alternative possibility is that the rattle evolved in the rocky habitats of the Southwest and Mexico, as a warning device against the snouts and paws of bears, ringtails, and coatis.

"More and more, anyone who collects animals for museum collections should not be satisfied simply with killing an organism and putting it in a jar," Greene says. "We're in a transition from the old days, when you just preserved a specimen, to the 21st-century way, which I call the 'total specimen approach.'" That approach means collecting DNA samples, storing them, deciphering DNA sequences, and depositing the sequences in GenBank, a publicly accessible database maintained by the National Institutes of Health. It means archiving photographs, video footage, and audio recordings in the Lab's Macaulay Library, where multimedia specimens will be globally accessible via the Internet. "The Johnson Center is the place where we'll move the concept of the total specimen forward, and we'll be doing it in a teaching context, for undergraduate and graduate students," says Greene. "The museum is going to be much more effective now that it's part of the Lab of Ornithology, because the Lab is such a conduit for vertebrate biology internationally." Students and professional biologists alike will be able to pursue their research questions using physical and multimedia specimens, and a DNA laboratory, without ever leaving the building.

The value of having the collections accessible to students was made clear by one recent Cornell undergraduate, Amber Wright. She wondered whether environmental stresses from a local golf course might be affecting a small population of spotted salamanders. Working with Zamudio, Wright compared specimens that she collected from Bull Pasture Pond beside the golf course with specimens collected from the same pond by Albert and Anna Wright in the 1930s and 1940s, before the golf course existed. Changes in the symmetry of the spots on salamanders can be one sign of environmental and developmental stresses, so Zamudio and Wright used digital photographs to analyze whether the pattern of the salamanders' spots had changed over the years. They found that the spots were significantly more asymmetrical now than they were 30 years ago at Bull Pasture Pond, while at the protected Ringwood Pond nearby, the symmetry of salamanders spots has remained unchanged.

The researchers who collected the museum's specimens years ago couldn't have known that a salamander's spots might one day serve as a measurement of environmental degradation, that a manakin's bones would lead to the first study showing how birds make sounds with their wings, or that a rattlesnake's tissues would yield DNA sequences that could be used to reconstruct its evolutionary history. "Living with a museum in our midst is hugely rewarding intellectually," says the Lab of Ornithology's director, John Fitzpatrick. "It exposes us to whole sets of new questions." ■

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A Library of Sight and Sound

BY SEAN SERRELL

The Macaulay Library's extensive collection of wildlife videos and sound recordings provides a vital resource for researchers

Visitors to the Lab's grand opening who managed to wind their way through the long corridors on the ground floor, past the flock of children having their faces painted with tiger stripes or hummingbirds, found a different sort of animal collection in the Macaulay Library. Each of the soundproof multimedia studios featured the sounds of a different animal, ranging from birds (Laughing Kookaburra and Winter Wren) to mammals (indri, bearded seal, and beluga whale) and even fish (plainfin midshipman). All of these selections came from the library's world-famous collection of more than 160,000 animal sound recordings, but these samples provided only a glimpse of the diversity of recordings the library is accumulating.

Under Jack Bradbury's direction, the Macaulay Library has broadened its focus considerably from its roots as a repository of animal sound recordings. The library is now incorporating video recordings into the collection, so that every component of a particular behavior, such as a courtship display, can be studied in depth as a whole. "We're trying to build as exhaustive a collection of specimens as we can," says Bradbury. "Having only the sound is almost like having a bird's body without its feathers. We want the entire specimen, properly archived, with the appropriate metadata saying where it was when it was recorded and what it was doing."

The library's entire sound archive is currently being copied from its original analog tape format to DVDs, to preserve the recordings for long-term archives. At the same time the library is increasing the depth of its collection to include full behavioral repertoires in the same way some museums have skins representing different ages or different subpopulations.

This new commitment to whole behavior is expressed in the library's five-year initiative to acquire audio and video footage of behaviors performed by each bird species in North America. "We defined what we call the matrix," says Bradbury. "The rows are the species, and the columns are the different kinds of behaviors that animals do. Our goal is to fill in that matrix, starting with all of the North American birds and then branching out into other groups and other regions. But as a long-term goal, the library will be more focused on trying to fill in all behaviors of all species." This push is being funded in part by the "Sponsor a Species" program, which will support expeditions to record new material.

The library is continuing to grow along the species row of the matrix as well, having just acquired its first recording of the California Condor, North America's largest and one of its rarest birds. During a condor release, a volunteer working with biologists from Hopper Mountain National Wildlife Refuge took the opportunity to hide a sensitive microphone in a rock pile two feet away from some carrion to record the bird's guttural vocalizations. Besides being rare—as of September 1, 2003, the wild population numbered only 85—the species is quite elusive. Condors can soar up to 140 miles a day foraging for food. So this recording was an exciting acquisition for the library.

The sounds that fill the oceans and seas, often so alien to our terrestrial ears, are another major focus of the Macaulay Library. Thanks to a $2.6-million grant from the U.S. Navy, the library will soon receive about 8,800 hours of marine animal recordings from more than 50 institutions. This acquisition will fill about one-third of the dozen 480-disc jukeboxes of DVDs that will store the library's collection. The major objectives of this grant are to improve our ability to distinguish sounds made by what the Navy calls 'biologics' (wildlife) from those made by 'non-biologics' (which could include foreign submarines and other possible security threats) and to create a master archive of underwater sounds that will help researchers assess the impact of military and other human activities on marine animals and ecosystems.

Far fewer sounds from the deep have been identified, let alone interpreted, than those made above the surface. "Because the sounds in that environment are not as familiar to us, we have to build an understanding of what we're hearing. There are lots of mechanical-sounding noises down there that are in fact animals making sounds," says Marc Dantzker, the library's visual curator.

Basic discoveries about two of the most common underwater sounds have only been made in the last few years. The mysterious and ubiquitous *boing*, first observed by U.S. Navy sonar operators in the 1950s and thought at the time to be an enemy submarine, was just last year finally identified as a sound that might have been made by a whale. And for many years, it was assumed that the racket made by colonies of snapping shrimp was delivered through the constant impact of millions of claws clamping shut. These shrimp, the largest source of ambient sound in warm coastal waters, make a noise similar to the crackle of a campfire, but at volumes of up to 200 dB, which can seriously interfere with sonar reception. Synchronized video and audio footage recorded at 40,000 frames per second has shown that the claws themselves do not produce much noise, but they shut with such force that cavitation bubbles—tiny implosions like those produced by propellers—form and then pop after the claws close. These bubbles, which are used to stun prey and defend territory, collapse so violently that they emit light in a phenomenon called sonoluminescence.

The Macaulay Library and the Lab's Bioacoustics Research Program (BRP) are teaming up to analyze the treasure trove of data acquired through the Navy grant. These two units have had a very close relationship for many years, the library acting as a repository for key recordings made by BRP and both programs using *Raven*, sound analysis software developed by BRP to archive and research natural sounds.

In a sound studio, archivist Shelagh Smith digitizes analog tapes of underwater sounds, some of which have never been described and catalogued before. Although it began as an archive for recordings of birds, such as the singing Chestnut-sided Warbler (left), the Macaulay Library has evolved into a multimedia museum showcasing the sounds and images of a wide variety of animals.

MARIE READ (LEFT); JON REIS

Now, information gleaned from these recordings will help enhance the "intelligence" of the Autonomous Recording Units that BRP researchers place on the ocean floor to record ambient sounds. With a more specific template of sounds to ignore, these units will be choosier about what they record.

Some behaviors sought by the library even defy being recorded with cameras, microphones, or hydrophones. For example, Electric Organ Discharge (EOD) waveforms made by "weakly electric fish" such as the wormjawed elephantfish, must be picked up through electrodes in order to be translated into sound. (Sound recordings themselves are basically electronic transcriptions of the audible world.) Carl Hopkins, a professor in Cornell's Department of Neurobiology and Behavior, is working with the library to contribute his extensive recordings of EODs made by mormyrids, West African freshwater fish that use a specialized electrosensory system for electrolocation and social communication. Hopkins's research has shown that these electrical signals allow a fish to recognize the sex and species of other nearby individuals. Some mormyrids use combinations of electrical and acoustic signals to select and pursue a mate. Considering the snapping shrimp, it's exciting to imagine what could be learned from a synchronized set of video, underwater audio, and EOD recordings, each enriching the data provided by the others.

In addition to scientific and military applications, multimedia recordings of behavior can serve the Lab's mission of education and conservation. For years, the Macaulay Library has produced audio field guides that have helped field researchers and birders alike to gain knowledge quickly about regional bird sounds. These include sets of biological monitoring CDs for the Caribbean, Peru, and the Andes, which scientists can use to survey and census hotspots for vanishing Neotropical species. According to audio curator Greg Budney, these CDs fill a drastic need, helping to increase the effectiveness of conservation efforts in specific areas of concern.

The library's incorporation of visual materials allows it to address the urgent, specific needs of other niches within conservation, such as captive-breeding programs. Bradbury says that video footage of endangered species living in their natural habitat helps people to "set up captive-breeding programs in a way that maximizes the normal behavior and normal patterns of the animals as well as can possibly be done in an enclosed situation." Sometimes even showing videos directly to captive animals may increase reproductive success, as some giant panda breeding programs in China have found. The male pandas' libidos, already naturally feeble, often wane further in captivity, but after being shown footage of pandas mating, some males have become demonstrably more amorous.

Movies focusing on threatened habitats and the species they support are being produced by the library to be shown in classrooms and theaters at the Lab and at museums. These films, such as the one on Hawaii currently being shown in the Lab's Bartels Family Multimedia Theater, are intended to be seamless experiences that make the viewer feel immersed in the often remote places being shown on screen. Future plans include films without spoken narrative, which will tell their stories through natural sounds and images or surround-sound audio-only programs that Budney says will also "transport" listeners.

These are not, of course, the most profound effects the new building will have on the Macaulay Library. Bringing the far-flung divisions of the Lab under one roof has fostered contact and collaboration among all parts of this institute. For the Macaulay Library, this has meant joining with the Cornell University Museum of Vertebrates to participate with international groups of natural history museums whose members share databases and other information. According to Bradbury, as soon as the collections go online next year with the help of the Lab's Information Technologies team, this massive network of information will be at anyone's fingertips.

"As a museum of animal sounds, and increasingly, animal videos and behavior, we can link and integrate our specimens with physical and genetic specimens, and other things in other places, so that a user can go online and say, 'I'm interested in bullfrogs,' and then have the sounds, the videos, and even the cross-sections of the ovaries that were done at the University of Kansas. Everything's right there at one site, and as far as the user is concerned, it's transparent," says Bradbury. The Macaulay Library has recently joined the National Science Digital Library, which connects many math and science libraries across the United States.

This will allow more people to use the library, and for a more diverse range of purposes. "We're trying to democratize the whole process and help people find exactly what they're looking for in video or audio," says Dantzker. Scientists, educators, moviemakers, students, military personnel, birders, and conservationists all will be able to use the collections. And when they find what they need, they'll be able to get it nearly instantly. ■

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Sound Tools for Wildlife Research

BY MATTHEW UNDERWOOD

The Lab's Bioacoustics Research Program is a world pioneer in developing technologies and methods using sound to study and count wildlife populations

AMY S. DELORENZO

In 1665, English scientist Robert Hooke wrote of the new worlds he glimpsed through his microscope. In every speck of earth, he claimed, "we now behold almost as great a variety of Creatures, as we were able before to reckon up in the whole Universe itself." A tireless promoter of technologies that could extend the power of the human senses, Hooke believed that investigators armed with proper tools could "excel others in their Observations, and Deductions, almost as much as they do Beasts." Today, the Lab's Bioacoustics Research Program (BRP) is developing technologies and methods that are providing startling new insights into animal behavior and more effective techniques for tracking and counting wildlife populations.

One such technology—as simple in concept as Hooke's microscope—is the use of strategically placed microphone arrays to study wildlife. The microphone arrays in use today grew from an effort begun in the early 1980s to count migrating bowhead whales in northern Alaska. These massive cetaceans are difficult to count by sight alone, because they often swim beneath the Arctic pack ice and can slip unseen past whale census points. BRP director Christopher Clark came up with a means of counting these whales by recording their vocalizations with a series of underwater microphones (called hydrophones) suspended through holes in the ice, spaced one kilometer apart. Each vocalizing whale was recorded simultaneously at varying angles and distances by three to five different hydrophones. The data were later digitized for computer analysis with a program called *Canary,* developed by BRP. *Canary* calculated each whale's location by determining the difference in time (measured in milliseconds) that it took for a vocalization to reach each hydrophone, providing precise information so researchers could plot each whale's position and find out how many were present.

Times have changed, and the technology has flourished. BRP researchers have developed a new, even more effective sound-analysis program called *Raven,* and they now make digital recordings right in the field. And the cumbersome cables are disappearing. Today BRP whale researchers use arrays of ocean-bottom Autonomous Recording Units (ARUs) called "pop-ups," engineered on the principle of "set it and forget it." Each unit contains batteries, a microphone, and a computer hard drive—all encased in a 17-inch, pressurized sphere attached to an anchor. Dropped in the ocean and left for months, they record the noises of the deep directly to disk. When prompted, each pop-up detaches from its anchor and floats to the surface, where it can be picked up by researchers.

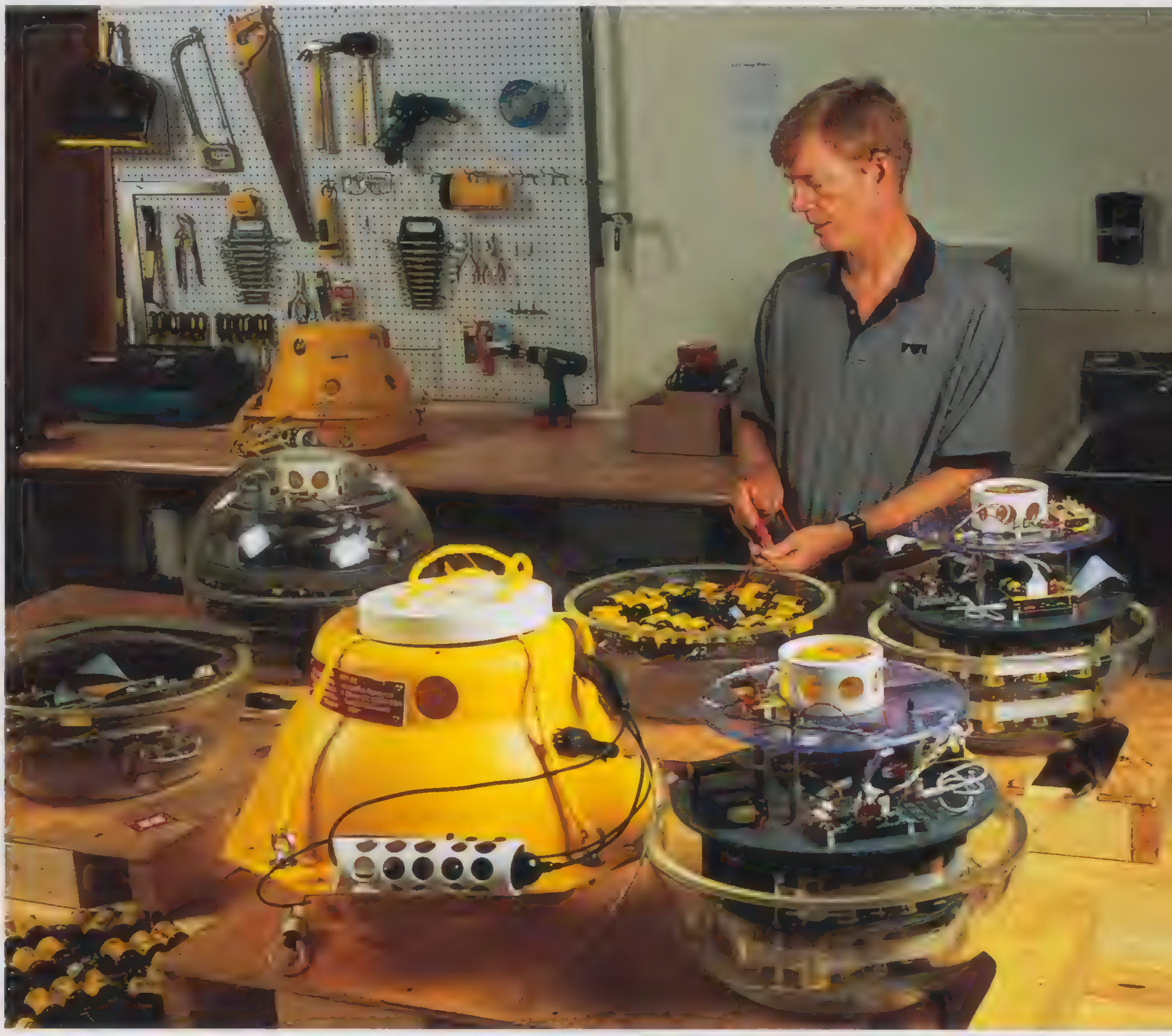
Currently, BRP researchers are using pop-ups in Cape Cod Bay to monitor northern right whales, which are listed as endangered species and are prone to fatal encounters with various ships and fishing gear. The data the ARUs gather reveal where the whales have traveled and when. According to BRP engineer Tom Calupca, researchers may eventually develop an auto-detection program for the whales, using ARUs mounted on buoys. The ARU would pick up a right whale's vocalizations, pinpoint the animal's location, and transmit the information instantly to the Lab through a cell-phone modem. The Lab could then provide a live-action map to ship traffic controllers, indicating the present location of every northern right whale around Cape Cod and taking the guesswork out of the effort to keep boats and behemoths apart in the bay.

Microphone arrays may also be the key to keeping forest elephants and farmers from clashing in West Africa. In Ghana's Kakum National Park, the Lab's Elephant Listening Project recently tested its innovative method of using land-based ARUs to census the park's elephant population. (To census elephants in this densely forested area, researchers previously had to count the number of fresh elephant dung piles along forest transects.) An outgrowth of that project may help to solve the problem of elephants raiding crops along the small park's borders. The Elephant Listening Project is currently testing an "acoustic net"—a string of microphones that could detect the vocalizations of approaching elephants and alert game managers before conflicts flare up.

As microphone array technology improves, the complexity of animal communication is becoming ever more apparent. Until recently, studying bird communication meant recording up to two birds—usually males fighting over territory—with one microphone. BRP biologist Sandra Vehrencamp has been using microphone arrays to record entire neighborhoods of Banded Wrens in Costa Rica simultaneously and to investigate the social function of the birds' raucous, multiplayer dawn chorus.

Each male wren employs around 20 song types in his personal repertoire, many in common with his neighbors. Beginning around 5:00 every morning, the males begin an intense, 45-minute jam session, passing riff after riff from bird to bird to bird. Vehrencamp can record up to 1,000 songs in one morning from four or five birds whose territories she surrounds with an array. Location analyses reveal the territory where each song originated, identifying the singer. Vehrencamp's goal is to amass a complete record of every song those four or five birds sang, so that the song type, the bird who sang it, and the next song are all arranged in chronological order. The work is time-intensive, first requiring months to build baseline reference recordings of each individual's entire repertoire. Verifying song-type matches is currently done manually (automated software is in the works), so indexing four mornings' choruses in this tiny study area has taken nearly a year.

Yet even this small amount of data offers a view into wren social organization. Already, Vehrencamp has noticed that the birds listen to all of their neighbors simultaneously, "making incredibly complex decisions about what song to sing at any moment in time, depending on who they're listening to and who they want to answer." The wrens nest in acacia trees,



Kurt Fristrup (above), assistant director of the Bioacoustics Research Program, helped design "pop-up" units that record the sounds of whales from the bottom of the ocean. The units pop up to the surface when they are finished recording. At left, Lab researchers deploy a pop-up in Cape Cod Bay to monitor northern right whales.

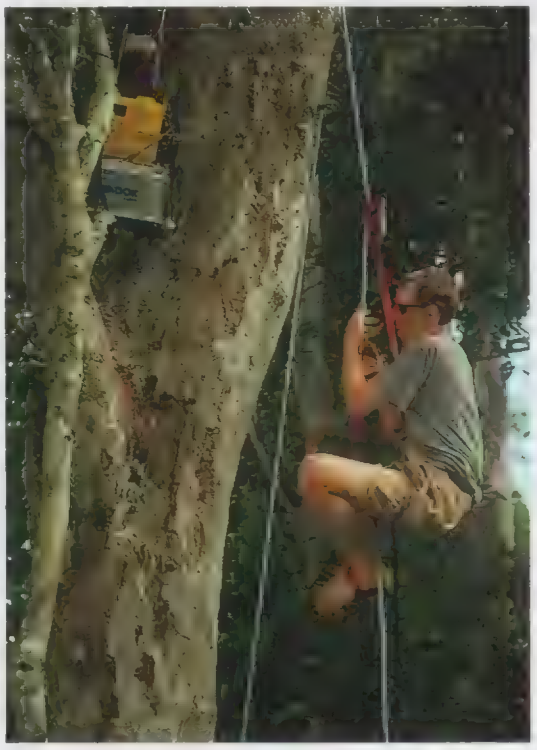
JON REIS

MELISSA GROO (2)

Led by the matriarch, a forest elephant family emerges into the Dzanga clearing in the Central African Republic. Microphone arrays have helped show that adult females vocalize extensively to keep their families together. Below, engineer Eric Spaulding climbs a tree to check on an Autonomous Recording Unit. The units must be attached to trees to prevent the elephants from damaging them.

which grow sparsely in the forests they inhabit, so nesting real estate is a hotly contested commodity. In order to find a suitable nesting site, Vehrencamp explains, a wren sometimes has to move in on another bird's territory. "The territories are dynamic, and that's why we think these are dawn chorus singers. We know it's a male-male thing, and every morning they're getting up and sorting out where their boundaries are." Researchers will pay close attention to this relationship as they analyze more data, looking to see whether the dynamics of the dawn chorus change as the territory boundaries shift.

Marc Dantzker (the Macaulay Library's visual curator) and Gail Patricelli hope that using microphone arrays will help them to understand more fully what function a male sage-grouse's ability to project a sound toward a particular female plays in the mating display. Dantzker has used a microphone array for mapping acoustic radiation patterns of male grouse to see where the birds project their various mating display sounds, some of which are directed with remarkable accuracy. He and Patricelli hypothesize that the most directional portion of the display, a high-pitched whistle that can be heard loud and clear only off the bird's shoulder, is also the most important—a sort of pick-up line intended for the ears of one female only. Dantzker and Patricelli plan to test this by measuring the male's display from the female's perspective using a microphone mounted on a robotic female sage-grouse. By measuring the male's acoustic radiation pattern with a microphone array while also measuring what the female hears, they will be able to test whether some males are better than others at tracking females and directing sound to them, and how that affects their mating success.



Understanding sage-grouse mating habits, determining the territorial dynamics at work in a neighborhood of Banded Wrens, and keeping elephants out of farm fields and right whales out of fishing nets seem to be fundamentally different scientific efforts, each requiring a window onto a different animal's world. Yet in each case, that window is provided by a single, elegantly simple technology, pioneered by the Lab's Bioacoustics Research Program. Microphone arrays help researchers to discover the complex worlds that these animals experience and also to preserve those species that are in peril before they disappear forever. ■

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Deciphering Molecular Mysteries

BY MIYOKO CHU

Using DNA, researchers in the Lab's Evolutionary Biology program explore the complexities of bird behavior, ecology, and evolution

How promiscuous is a Tree Swallow (below right)? Valentina Ferretti (facing page, holding a micropipet) uses DNA to determine Tree Swallow paternity as Evolutionary Biology director Irby Lovette looks on.

In Michael Crichton's *Jurassic Park,* scientists extract dinosaur DNA from a fossilized mosquito that had fed on dinosaur blood. Fiction, yes. But if you walk into the Cornell Lab of Ornithology's evolutionary biology laboratory, you won't be disappointed by what biologists are really learning by consulting the DNA of animals.

On the surface, the setup looks fairly simple. Inside the laboratory are three long black tables called lab benches—the fireproof kind you'll find in any college chemistry lab. Along the benches, undergraduates, graduate students, and Ph.D. biologists sit hunched over small trays filled with tiny plastic tubes. They're in various stages of labeling them, or adding liquids using a micropipet—a slimmed-down, high-tech version of a turkey baster. The mysterious thing is that you can't see any sign of the animals they're studying—warblers, swallows, House Finches, todies from Hispaniola, Gray-headed Social-Weavers from East Africa, and even vampire bats from Latin America. The DNA from all of these animals is somewhere in the little tubes, as are the answers to a multitude of questions about social behavior, disease, conservation, and evolution.

MARIE READ

Graduate student Rebecca Safran and undergraduate Colby Neuman sit at one of the lab benches with 48 small tubes in front of them. The contents of these tubes may answer an intriguing question about the lives of Barn Swallows: How do female Barn Swallows choose their mates? One of a Barn Swallow's most conspicuous features is its long forked tail, and researchers in Europe have found that the males with the longest tails sire the most young. But Safran's work shows that female Barn Swallows here in Ithaca, New York, seem to have an even greater preference for males who sport the most brightly colored ventral feathers. Using genetic analyses of blood samples to determine paternity in 70 Barn Swallow families, she and Neuman will soon find out whether males with darker feathers were cuckolded by their more brightly colored neighbors.

In principle, the process of isolating DNA from blood is not much different from panning for gold. But instead of metal pans and sluice boxes, Safran and Neuman use 48 tiny columns, each with a piece of white filter paper in the bottom to catch the DNA. Using a micropipet, they add a miniscule amount of the blood sample to each filter—50 microliters to be exact (nearly 300 drops of this size would be required to fill a tablespoon). They add a series of solutions to trap the DNA on the filter while letting unwanted materials pass through. It takes a measure of faith, working with the invisible. Fortunately, their samples have so much DNA in them that, unlike panning for gold, virtually every sample is likely to yield what they're looking for.

On the other side of the room, graduate student Valentina Ferretti carefully holds what looks like a flat square of transparent Jell-O on a paper towel. She's already done her panning for Tree Swallow DNA and is about to see whether she actually got any. Half an hour earlier, she injected a bit of each sample into the gel and ran an electric current through it to pull any DNA down its length. A special stain will light up any DNA present, making it glow under ultraviolet light. Ferretti pops the gel into a box, a mini-darkroom hooked up to a digital camera and computer. Thin bands show up on the computer screen where the DNA is glowing in the gel. "Yes, there is enough," Ferretti says with a relieved smile.

The next step is to use the DNA in a paternity analysis of Tree Swallows which, like Barn Swallows, are prone to mating with more than one partner. Though Tree Swallows are socially monogamous, researchers have found that as many as 80 percent of nests have at least one nestling sired by a male other than its social father, an extremely high incidence for any bird species. By analyzing DNA samples from Tree Swallows in the United States, Mangrove Swallows in Belize, and White-rumped Swallows in Argentina over the next few years, Ferretti will be sorting out why promiscuous behaviors vary, and the underlying ecological and social factors that contribute to this variability.

JON REIS

Meanwhile, undergraduate Megan Szymanski at the adjacent lab bench has already confirmed that her extractions of DNA from nine warbler species worked. Her next task is, in theory, no different from looking for dinosaur DNA in a mosquito. Though it's the warblers she sampled, she's really after the DNA of microscopic parasites that live in the warblers' blood cells and cause avian malaria. In real life, extracting dinosaur DNA doesn't work, because none is left after millions of years of degradation. But all Szymanski needs is a single fragment of parasite DNA in her sample, and she'll be able to amass billions of copies in two hours, using a polymerase chain reaction (PCR) machine.

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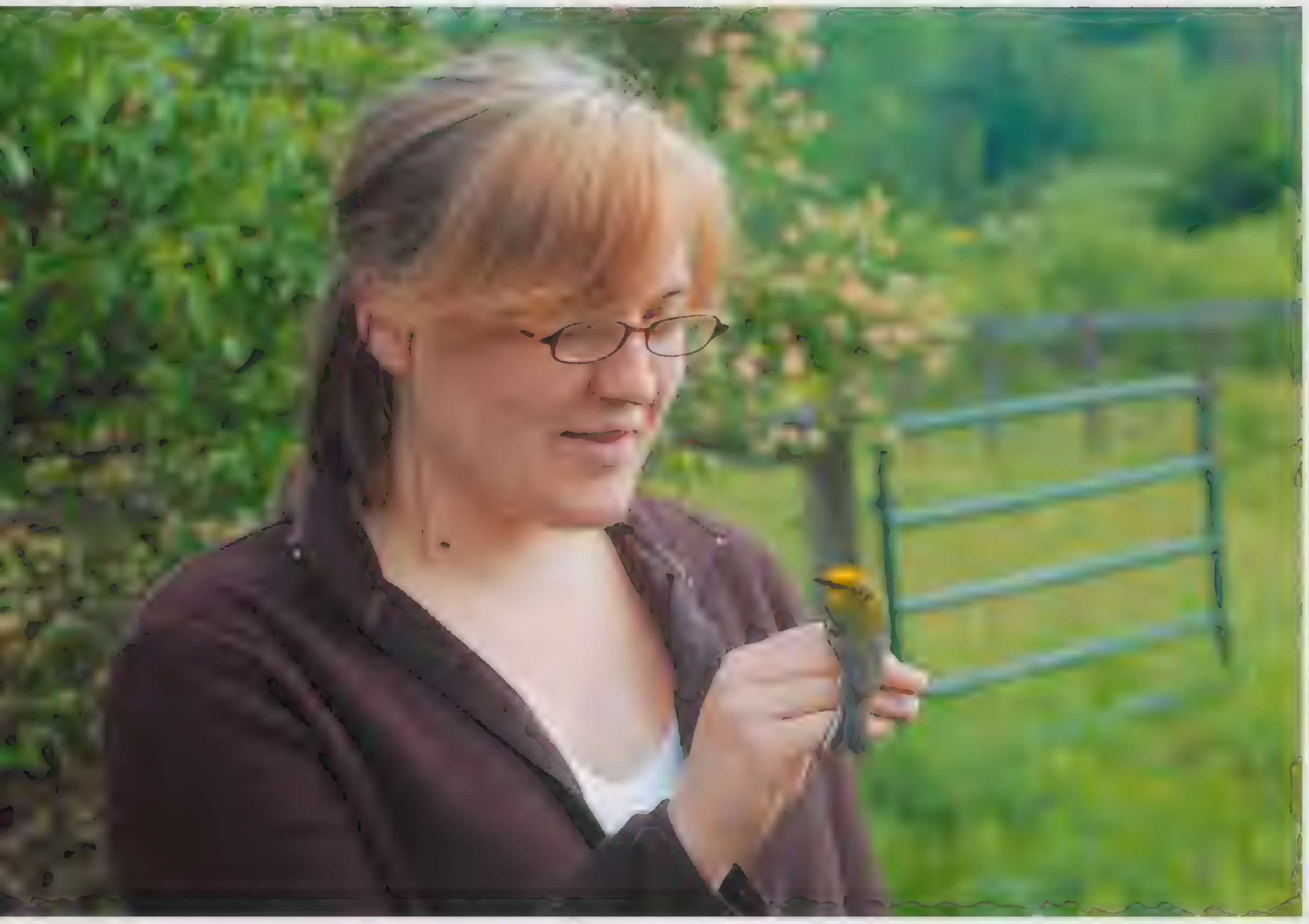

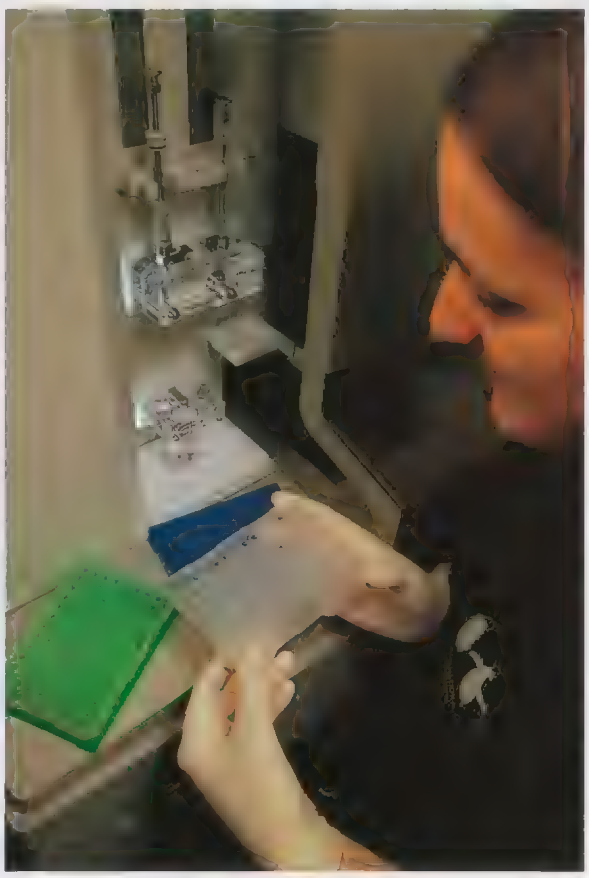

JON REIS

Cornell undergraduate Amy Dabrowski (above) holds a Blue-winged Warbler she netted in Ithaca, New York. She will extract DNA from a sample of blood to study the genetic consequences of hybridization between Blue-winged and Golden-winged warblers. Below, researcher Helen Markland loads the DNA sequencing machine with samples from Vitelline Warblers in the Caribbean. She'll compare DNA sequences to determine whether populations on different islands are unique.

chine is unremarkable in appearance—a box that superficially resembles a CD player with a capsule for inserting 96 tiny tubes instead of a disc. "In the little tubes we've put all the biological machinery necessary to make DNA," says Irby Lovette, director of the Lab's Evolutionary Biology program. "We put in the raw building blocks of DNA, the enzyme that links the building blocks into the DNA chain, and a couple of pieces that direct everything to happen on the segment of DNA we want." The machine does nothing fancier than heat and cool this cocktail, a process that will create two copies, then four, then sixteen, and so on into the billions, until there is enough DNA for Szymanski to use.

This process allows Szymanski not only to detect whether the pathogens are present, but to provide enough DNA so that she can sequence their genes and identify different strains. In a pilot study last year, she found that 11 of 19 warblers were infected with three different strains of avian malaria. This year she hopes to gain a better understanding of how parasite strains have evolved in various warbler species over time.

Sequencing DNA is an impressive feat; it means being able to read an organism's genetic code, one unit, or nucleotide base, at a time. If you could sequence the entire genome, as scientists have done for humans and other organisms, you'd have the genetic instructions needed to build an entire organism. But even a fragment of the genome, akin to a few sentences in a 1,000-page volume, contains enough information to sort out whether a particular male is the genetic father of the young it is raising, whether different populations of birds are genetically distinct, and how different species are related to one another.

Helen Markland stands in front of the machine that will read a 600-base-pair section of DNA from Vitelline Warblers, which are endemic to only a few remote islands in the West Indies. By studying their genetic variation, Markland hopes to find the answers to important conservation-related questions, including whether each island's population is genetically unique and in need of protection. She's already isolated the DNA, used the PCR machine to make several copies, and prepared her samples for the automated sequencing machine. At this point, the process is deceptively simple: she enters the sample numbers on a computer, puts her tubes onto a tray in the machine, and hits "Go." The machine does the rest of the work, pulling her sample into tiny glass capillary tubes and running a laser beam over the sample to identify different base pairs, labeled with colored fluorescent dyes.

In a few hours, the machine is finished, and Markland transfers her data file to the laboratory's computer room. "I still can't believe that I put all those clear liquids into the machine and it came out with this," Markland says. There on the computer screen is a beautiful sight: wavy lines representing nucleotide bases that were detected, and the genetic sequence for each Vitelline Warbler she sampled, with the letters A, C, G, and T representing each kind of base. When the computer lines up the sequences from the different birds, it shows that most are identical. But in a portion of the segment, one bird's DNA has a G in place of an A. "This bird's DNA sequence is different," Markland says, pointing to the anomalous letter. And it's from a different island than the others. That's the kind of pattern I'm looking for."

The DNA sequences that Markland and others find will be sent over the Internet to GenBank, an international DNA database maintained by the National Institutes of Health. They'll be accessible to anyone who wants to use the sequences for other studies. Over the years, Lovette has contributed thousands of sequences to GenBank as part of his work in studying the evolutionary history of warblers and in sorting out how different species are related to one another. The new evolutionary biology lab has only been up and running for four months, but the young biologists in his crew are well on their way toward contributing to bird study and molecular biology in general.

Dozens of people use the Lab of Ornithology's DNA laboratory. Some, like Markland, are exploring population genetics to inform conservation decisions about rapidly declining Golden-winged Warblers and federally threatened Florida Scrub-Jays. Others, like Safran and Ferretti, are using DNA to understand the complex mating behaviors of birds. Researcher Sue McRae is studying the family lives of Gray-headed Social-Weavers, using DNA to sort out relationships among kin. Graduate student Dana Hawley is investigating whether the lack of genetic variation in House Finches in the East makes them particularly susceptible to mycoplasmal conjunctivitis, a deadly eye disease. Still others aren't studying birds at all; undergraduate Gerald Carter is trying to isolate bird DNA from the stomachs of vampire bats to get a better understanding of what bats eat.

Remarkably, most of those who work here do not have any previous experience in molecular biology. "One of the beautiful things about our DNA analyses is that they all use the same tool box," says Lovette. "You can train people in very basic skills that are universally applicable to all of molecular biology, whether they want to continue in ornithology or become cancer researchers."

"My background is in field biology," says Ferretti. "Before I came here, I never thought I could work with DNA. Now I'm learning the molecular techniques, and I'm enjoying it. It opens up so many possibilities." ■

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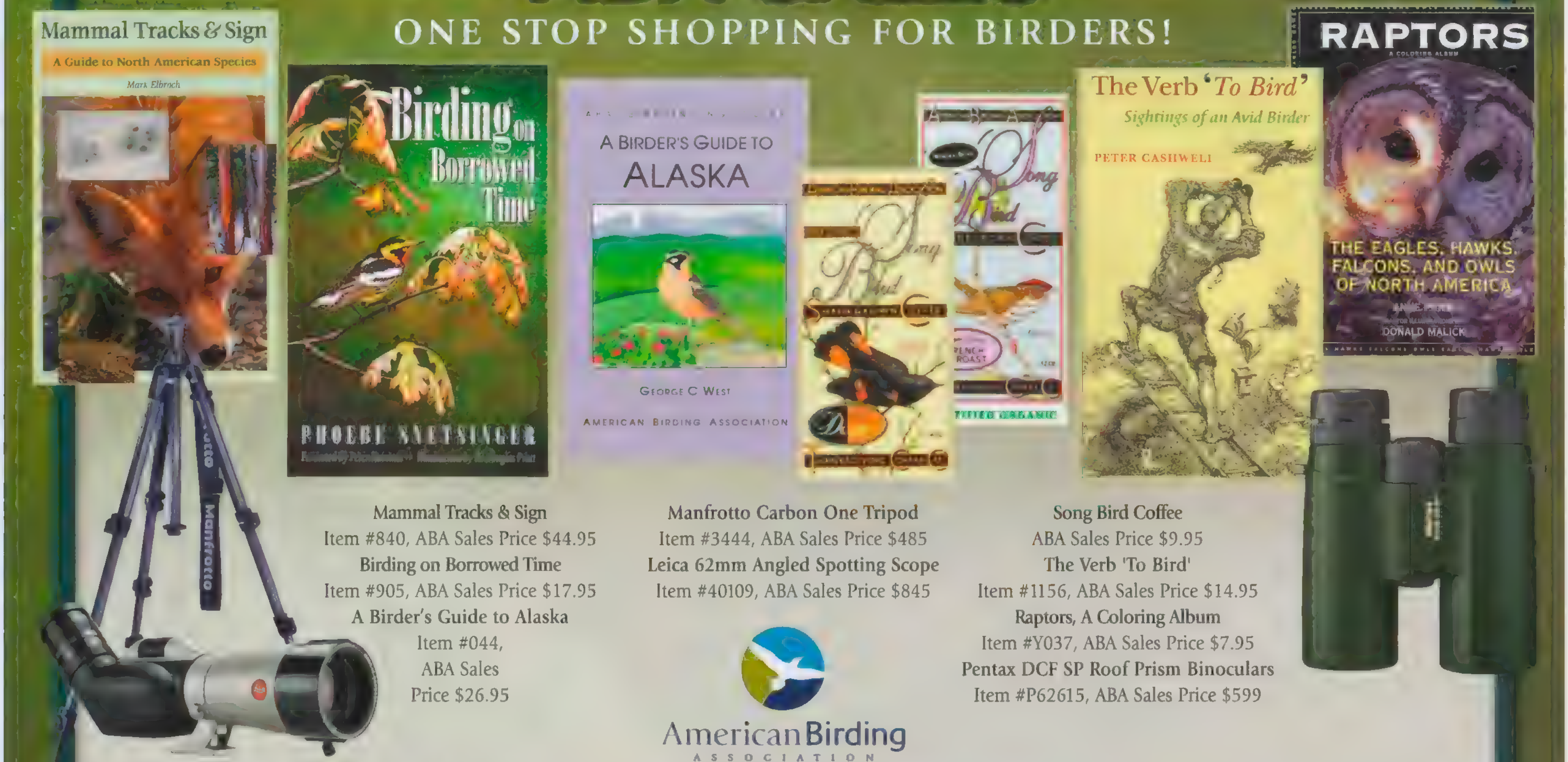

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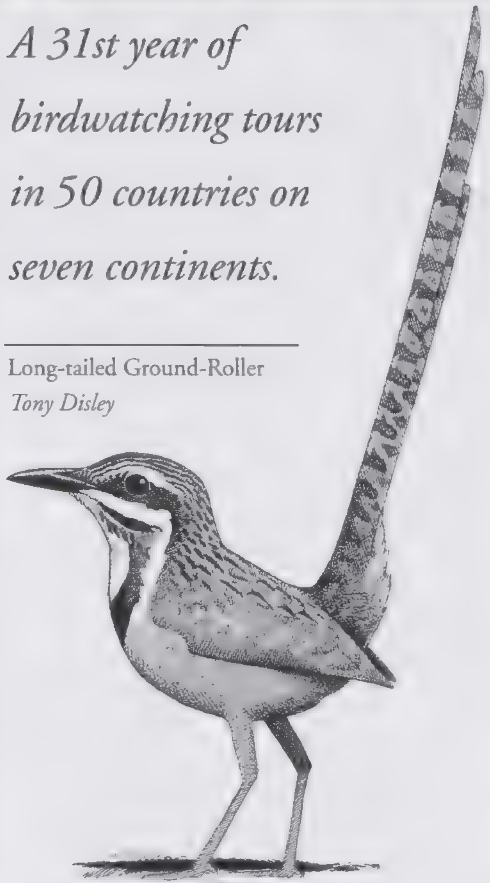

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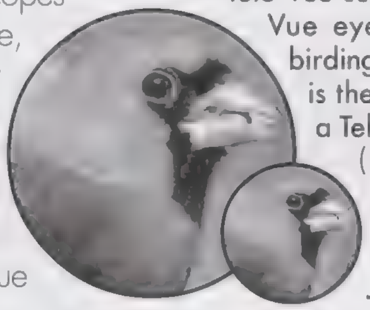

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Visionary

The View from the Mezzanine

BY TIM GALLAGHER

From a lofty perch, high above the rest of the Lab, the Information Technologies group creates high-tech solutions for gathering and dispersing data about birds

In his office on the third-floor mezzanine, overlooking Sapsucker Woods Pond, Steve Kelling is right where he wants to be—the best birding spot in the entire Johnson Center. From this strategic lookout, he has a spectacular view of the pond with its waterfowl and wading birds, and he's at eye-level with the songbird-rich forest canopy and the old snag at the far side of the pond, a favorite spot for Ospreys and other raptors. Like many of the Lab staff, Kelling is an avid birder. A long-time member of the Sapsuckers—the Lab's ace big-day team—Kelling spends a large part of his free time gazing through binoculars, in search of interesting birds.

When he's not birding, he is guru-in-chief of the Lab's Information Technologies (IT) program. Kelling's talented group of programmers deals on a daily basis with creating technological marvels on the computer. To see what I mean, just visit the Lab's web site at <www.birds.cornell.edu>. There you'll find a host of interactive features to enhance your knowledge and enjoyment of birds, such as eBird—a joint Lab of Ornithology/Audubon project that allows you to add your daily bird sightings to a huge national database. Using eBird, you can perform real-time queries of the database and get the information you're after, including maps, satellite photographs, and graphs within seconds.

According to Kelling, the Internet was made for the Lab of Ornithology. "The Lab has such a long history of engaging the public in citizen science," he says. "The World Wide Web extends our reach much further so that we can begin to collect data from the thousands of people across the continent who keep records of the birds they see."

"Birding with a Purpose" is the catchphrase at IT. You're going out and finding birds for your personal enjoyment anyway, but using eBird you're also compiling vital data that will be put to use by scientists and conservationists. But why is this information on bird sightings so important? Because so many gaps exist in our knowledge of the ranges, population dynamics, and movements of birds—even common species. To design effective conservation strategies and management guidelines we need to know where a species lives, how abundant it is, and whether its numbers are rising, falling, or remaining static. By engaging thousands—or perhaps even millions—of bird enthusiasts in data gathering over a period of years, we'll amass a long-term database that will become a powerful tool for conservation.

Another ground-breaking Internet feature, recently launched by the Lab, is "All About Birds," an online guide to North American birds. Using information from the *Birds of North America* series, All About Birds offers natural history accounts on more than 200 species as well as photographs, range maps, and vocalizations. "It shows you how different birds occur in different habitats, tells you about good areas to bird across the country, and provides up-to-date conservation information," says Kelling.

JON REIS

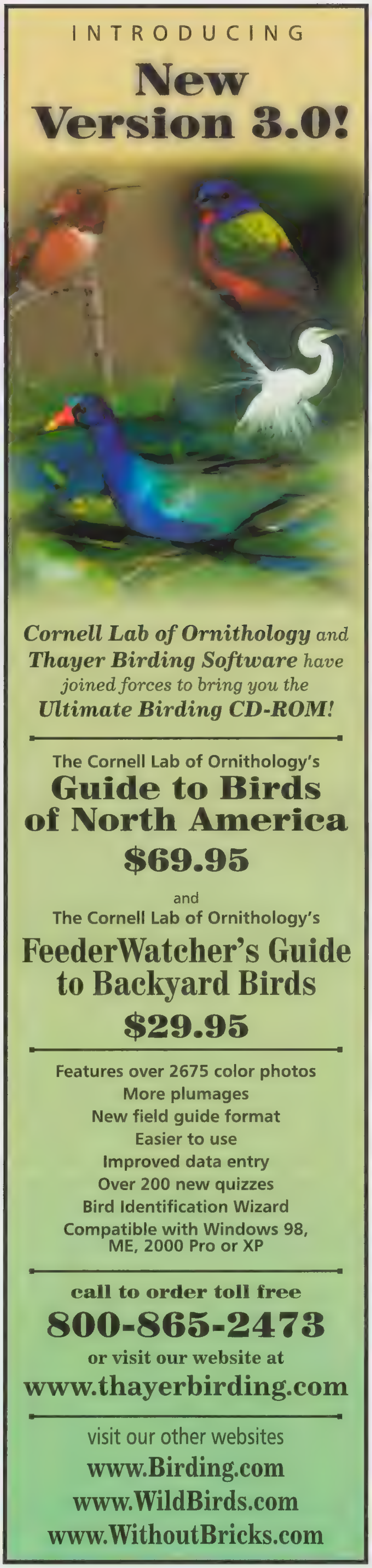
Eventually, every species of North American bird will be covered in this handy online guide.

Kelling has a broad vision for the future of the Lab's Information Technologies program. He hopes to bring bird watching and ornithology into the world of high-performance computing. The IT group is establishing partnerships with large supercomputing groups such as the San Diego Supercomputer Center at the University of California, San Diego, and the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign. Why is this a good thing? Because the analyzing of data will be speeded up to a degree nearly unimaginable in the past.

"Lab researchers recently analyzed a table of FeederWatch data, and it took almost a week to do it because of all the covariants involved," says Kelling. "The problem is, they were using a single processor. By using high-performance computing techniques, we could run the application in parallel, literally using hundreds or even thousands of processors to accomplish the work in a fraction of the time."

The IT group is currently setting up a massive bird-monitoring network called the Avian Knowledge Network, which will allow anyone to have access to the largest environmental data set currently in existence—approximately 60 million records spanning a century. "As soon as we organize all of these data into a data grid, we'll be able to use the same kind of supercomputers employed in physics and nuclear studies," says Kelling. "This will allow us to begin asking questions in much greater detail about the effects of global climate change, habitat fragmentation, and other factors on bird populations—which species are increasing, which ones are decreasing." This can only be a good thing for the scientists and conservationists working to save our threatened bird populations. ■

Steve Kelling, director of the Lab's Information Technologies group, peers out from his eyrie on the third-floor mezzanine, where his staff creates technological marvels on a near-daily basis.



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Introducing BNA Online

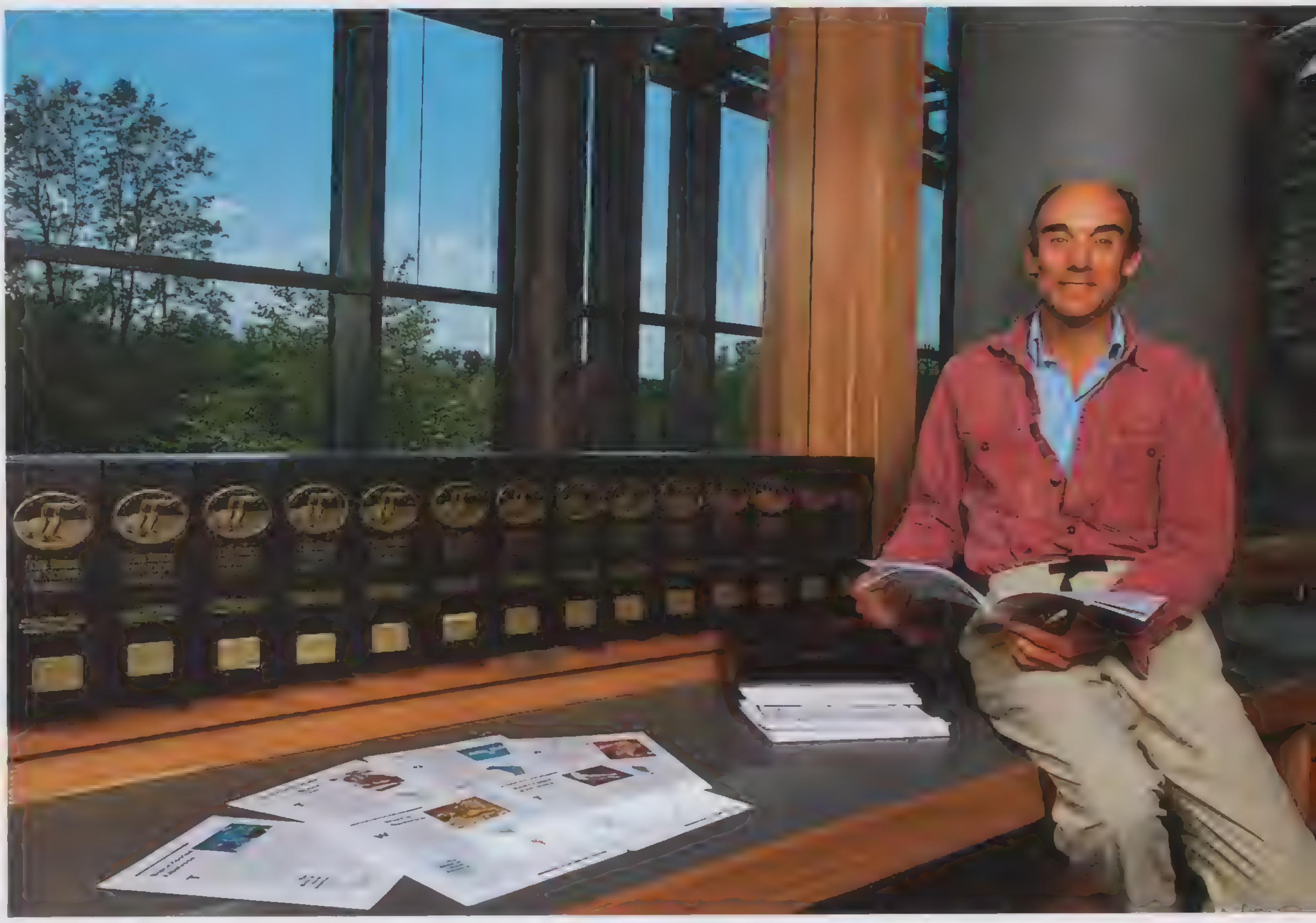
The acclaimed Birds of North America series gets set to fly into cyberspace

Only four times in the history of American ornithology has an effort been made to publish a complete set of the life histories of our continent's breeding birds. Alexander Wilson and John James Audubon both produced massive volumes, complete with hand-colored illustrations, in the early 19th century. Arthur Cleveland Bent followed suit a century later with his popular series, *Life Histories of North American Birds.* The Lab of Ornithology is now home to the most recent of these efforts, the monumental 18-volume *Birds of North America* (BNA).

BNA provides in-depth information on nearly all aspects of the biology and ecology of breeding birds in the United States (including Hawaii) and Canada—some 740 species—summarizing much of what is known about each species. Hundreds of authors across the continent were involved in this decade-long effort, based at the Philadelphia Academy of Natural Sciences with the Lab of Ornithology as one of its major partners. From conservation to breeding behavior, distribution to migration, diet to population dynamics, and molts to vocalizations, BNA covers it all.

But currently—unless you live near a research library or have a friend with six feet of shelf space who purchased the series—you may have a hard time accessing this information. The Lab of Ornithology intends to change that. When the final volumes were published late last year, the Lab acquired the rights to the series and invited BNA chief editor Alan Poole to join our staff. Alan arrived this past spring and is now creating an online version of BNA, which will be available next year through the Lab's web site <www.birds.cornell.edu>.

These days most large encyclopedias have



Alan Poole poses beside the full set of hard-copy BNA accounts he edited during the past decade. Soon the accounts will be available online.

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web-based versions, which provide significant advantages over the older paper volumes. Online material can be updated quickly and easily, creating a living resource instead of one increasingly out of date. In addition, an online database is searchable, a distinct advantage when you're trying to find material scattered through BNA's 18,000 pages. Need clutch-size data for all waterfowl nesting west of the Rockies? You'll be able to get it with just a couple of keystrokes. Another few clicks and you'll have comparable data for ducks breeding in Quebec or Texas. Clearly the research possibilities are extraordinary. Never before has this depth of information on North American birds been available so quickly and easily to so many.

BNA Online will also take advantage of the many sound and video resources in the Lab's Macaulay Library. Linked to the BNA account of the Franklin's Gull, for example, you might find a half-dozen photographs of its prairie nesting sloughs, of young and the floating reed nests that support them, close-ups of different plumages that vary with season and age, as well as video sequences of courtship and feeding behavior, to name just a few possibilities. A link to the Lab's eBird database might provide a glimpse of where this species is found during migration. And most of the online BNA accounts will provide recordings of calls and songs. So even in the depths of winter from the comfort of your home, you'll have access to recordings of thrush songs in the northern forests or the din of a gull colony in the Carolinas.

Clearly the possibilities are limitless, and the size and content of online species accounts will grow as the BNA project evolves. But large databases require considerable effort to develop and maintain, as well as the initial cost of acquiring the material. To recoup these expenses, the Lab will charge a modest fee for accessing this extraordinary database. Lab members will receive a discount. Much of *The Birds of North America* will be available online by early 2004. Stay tuned to *Living Bird* and *BirdScope* or the Lab's web site at <www.birds.cornell.edu> for details. ■

Teaching the Next Generation

BY RICHARD E. BONNEY, JR.

The Lab of Ornithology plays a vital role in education nationwide

Education permeates everything we do at the Cornell Lab of Ornithology. Every one of our programs, from Bird Population Studies to Evolutionary Biology, strives not only to conduct groundbreaking research, but also to inform, stimulate, and even directly engage the public. You'd have to look long and hard to find a group as dedicated to education as the Lab's scientific staff, whose members continually find time to write articles for our magazine and newsletter, to give lectures both in and out of classrooms, to appear on radio and television shows, to help lead hands-on workshops, and to prepare huge numbers of pages for the Lab's vast site on the World Wide Web.

But the Lab's dedication to teaching goes even further. Indeed, over the past two decades we have developed an entire program devoted to public education, which offers information, resources, and projects for citizens of all ages, backgrounds, and ornithological abilities.

One of our most visible educational products is in your hands. The current incarnation of *Living Bird* was launched in 1982 as a means of informing the public about the most recent findings in bird watching, ornithological research, and bird conservation. Although *Living Bird* actually debuted in 1962, for its first 20 years it was published as an annual technical journal containing mostly original research. The current

Young citizen scientists at an elementary school watch birds and observe their behavior as part of their Classroom FeederWatch curriculum.

TIM GALLAGHER

magazine, which has won numerous awards for its content and design, still includes many articles written by scientists, but they are presented in a non-technical manner.

Another major Lab publication is *BirdScope*, the Lab's newsletter. Unlike *Living Bird*, which usually presents bird information from scientists and bird organizations around the world, *BirdScope* focuses on the Lab's own projects, programs, and people. *BirdScope* debuted in the summer of 1987 with a lead article on pigeon navigation and homing written by then director Charles Walcott.

Hands-on workshops are among the many Lab offerings. Above, a workshop leader helps participants identify an Empidonax flycatcher.

IRBY LOVETTE

For people who wish to read even more—hundreds of pages more—the Lab offers a Home Study Course in Bird Biology designed to provide comprehensive information on birds and their environments in a manner accessible to nonscientists and teachers around the world. The current edition, released in 2001, was several years in the making and consists of 10 chapters written by experts in each of several fields such as bird behavior, ecology, and conservation. The course was originally released in 1972, and between then and 1998—when it was taken out of print in anticipation of the new edition—more than 10,000 students received graduation certificates. The newest version, on the street for less than two years, already has enrolled more than 2,100 students, many of whom are extremely pleased with the product. One student, a special education teacher from Florida, recently wrote "This course has kept me in a continuous state of amazement at the complexities and competencies of birds. And I appreciate the tone of the writing—while remaining objective in the presentation of facts and theories, each author shows true respect and love for not only birds but all of life, and has maintained a sense of awe and wonder about the subject of his or her life's work."

The Lab's Education program is also heavily involved in our Citizen Science program, described in more detail on page 14. In fact, much of the funding that has supported the development and testing of our innovative citizen-science projects—designed to engage the public in professional research—has been generously granted from the National Science Foundation's Directorate of Education and Human Resources. While this initially might seem odd, considering that the projects are consistently contributing to scientific knowledge, participants are also learning a great deal about birds, ecology, observation, and the scientific process as a result of their endeavors. Quotes such as this one from a participant in Project FeederWatch are common: "I have always enjoyed birds, but Project FeederWatch 'forced' me to sit down and actually watch them. After awhile, I began to notice patterns and behaviors in some birds that prompted me to take a closer look. It's then that I realized I was seeing birds that I thought never visited my feeders!"

Indeed, we receive letters like this from participants in all our projects—The Birdhouse Network, Urban Bird Studies, the House Finch Disease Survey, Birds in Forested Landscapes, the Great Backyard Bird Count, and many more. One of the functions of the Lab's Education program is to study and document the social and educational impacts of citizen-science participation. Letters from participants are a start, but we also administer surveys and visit sites such as science museums, Audubon chapters, and youth organizations that are implementing our projects as part of their educational activities.

The Lab's Education program also has embraced the World Wide Web as a teaching tool. All of the Lab's citizen-science projects are now online, and most have developed interactive web sites where participants can submit, retrieve, and explore data. A good example is eBird, for which participants can now submit sightings of any birds they see, anyplace, anytime. Lab educators are heavily involved in designing these sites, conducting "usability studies" to ensure that they are easy to use and navigate. In addition, the Education program builds information sites, such as our soon-to-be launched "All About Birds" site, with detailed accounts of more than 200 North American species as well as information about birds and bird watching in general. We hope that over the next few years, All About Birds will become the place to go for virtually any ornithological information.

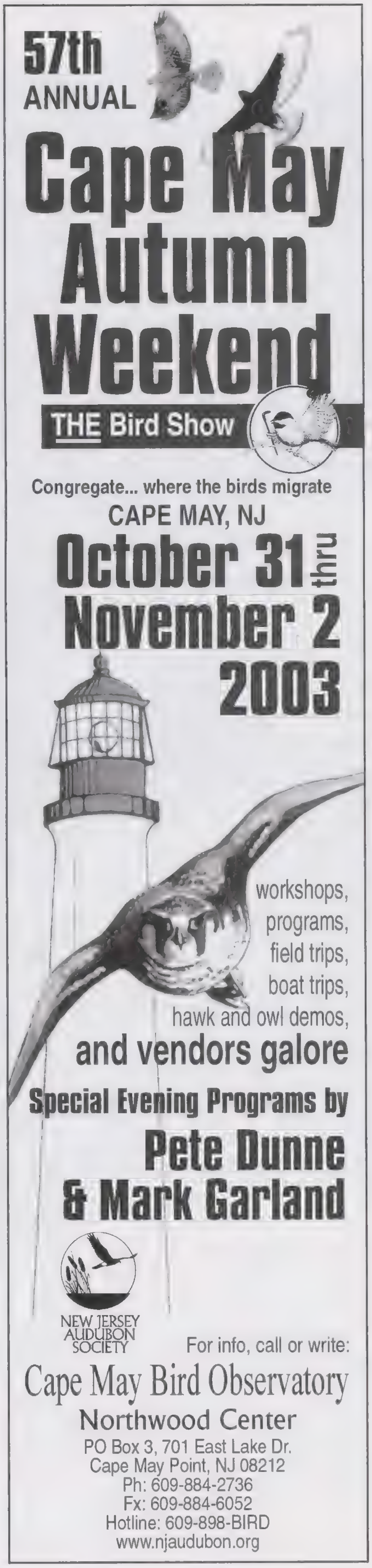
The Education program also designs curricula for use in elementary and middle schools, an endeavor that offers our greatest reward but also our biggest challenge. To understand why, consider briefly the National Science Education Standards, an excellent set of guidelines published in 1996 by the National Research Council. In a nutshell, the Standards state that science is best taught and learned when students engage in extended inquiry and research. "Students should experience science that engages them in actively constructing ideas and explanations and that enhances their abilities to do science," the Standards assert. Teachers must "encourage and model the skills of scientific inquiry, as well as the curiosity, openness to new ideas and data, and skepticisms that characterize science."

These ideas resonate beautifully with the concept of citizen science, whose projects provide unparalleled opportunities to facilitate authentic classroom research. And indeed our first curriculum, Classroom FeederWatch, is designed to help teachers lead their students through the entire research process, from learning to identify birds, to putting up feeders, to counting and studying feeder birds, to conducting original bird research in schoolyards or local neighborhoods. Many research articles written by Classroom FeederWatch students, based on ideas they thought up on their own, are published each year in our student journal, *Classroom Birdscope.*

Both students and teachers love this program. One third-grade teacher from New Jersey told us "Classroom FeederWatch takes learning beyond the walls of the school. It creates excitement and enthusiasm in children. After nighttime parent meetings at our school to explain the program, parents pick up the excitement of their children and begin to learn bird biology, identification, and behavior. Observing and studying birds becomes a family hobby." A sixth-grade teacher from New York wrote "I was drawn to the data analysis and research aspect. Students gather their own data; they're not just reading results out of a book. It's authentic research that children can handle." And an eighth-grade teacher from Utah wrote "Cornell leads the way in this exciting form of science education. If possible, I would base my entire curriculum on developing partnerships between my students and professional scientists conducting authentic research."

And therein lies the challenge. In these days of high-stakes testing, where students are primarily required to memorize facts for standardized tests, finding classroom time to engender the kind of powerful learning espoused by the National Research Council is difficult. And yet, witnessing the power of our projects to develop student interest in ecology and nature, we are committed to persevere, both hoping that the educational pendulum will once again swing in the direction of inquiry education and also helping to lead the charge by demonstrating the impact of our projects. Toward that end, we have just received a new grant from the National Science Foundation's instructional materials development program to build a bigger and stronger curriculum based on eBird, so that teachers will be able to conduct bird studies in virtually any location.

The Lab's public programs represent the best in meaningful, hands-on research, allowing people of all ages and from all walks of life to become directly involved with the process of science. And they have the satisfaction of knowing that the data they gather will ultimately be used to design effective conservation strategies in the years ahead. ■



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Bird Conservation: Our Common Mission

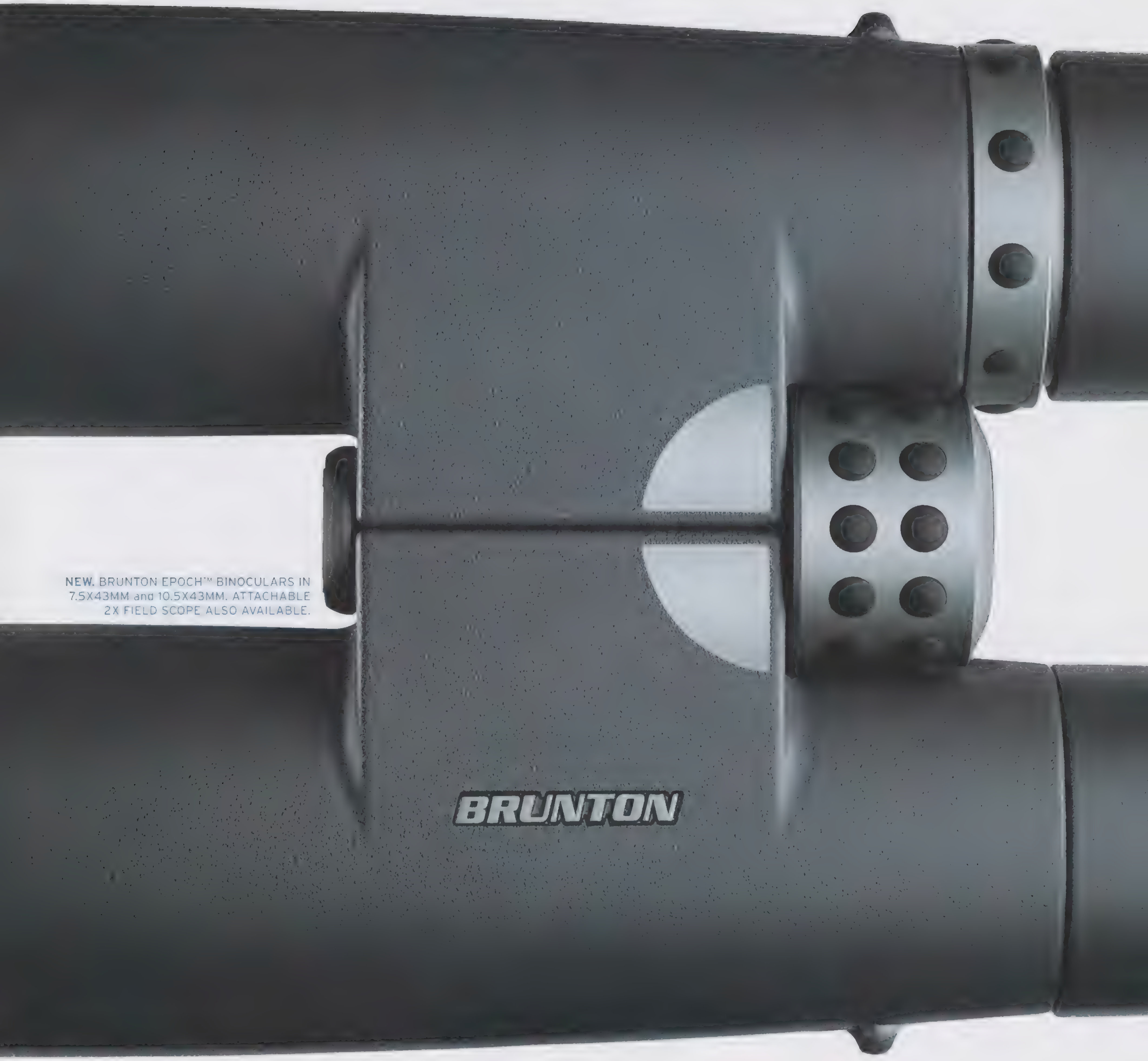
One hundred and fifty years ago, Passenger Pigeons still migrated over this very spot by the tens of millions twice each year. Thousands of Eskimo Curlews descended on New England blueberry fields each fall, and on black earth prairies of the Great Plains each spring. Had there been a Laboratory of Ornithology back then, we might still be seeing spectacular flocks of these now-extinct birds today. In its largest sense, our fundamental mission is simple: conserve the earth's precious natural areas and species, their processes and interactions, and their evolutionary potential. We approach our mission by studying, teaching about, conserving, and celebrating earth's most beautiful and powerful messengers of nature. Birds connect us with nature. They help us understand how nature functions and what it requires to persist in the face of change. We study endangered birds to keep them from going extinct, but just as important, we study our backyard birds in order to keep common birds common. Ultimately, we seek to maintain the underlying natural systems upon which all our birds depend. This is the essence of conservation.

The Cornell Laboratory of Ornithology is unique in the world. Every day we unite internationally recognized scientists with students of all ages and citizens of all occupations. We embrace and cherish the notion that science is not an exercise for the ivory tower; it is simply an organized way of being curious about how nature works. Everybody is born with this curiosity, hence we share our explorations with millions of citizens around the world, helping them enjoy the wonders of our living planet. At the same time that we provide resources to help people explore, we also seek the knowledge that emerges from countless observations in backyards, neighborhood parks, school grounds, cemeteries, and woodlots.

A venerable and maturing backyard surrounds our own new home. Sapsucker Woods beckons to us every day. We now live and work in a very special laboratory indeed, named for a wonderful woman who has embraced nature all of her life and who inspires us to understand and teach it to every audience. Our home will always be here for you to visit, and you will gain great inspiration if you do so. But, as Gene Johnson can attest, some of the biggest inspirations of all emerge from your own special places. They beckon to you to explore them further. For generations to come, the Laboratory of Ornithology will use the most modern resources available to help you explore, appreciate, and protect our earth's most beautiful and timeless living inhabitants.

SANDHILL CRANES BY FRANCIS LEE JACQUES

John W Fitzpatrick



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LIVING BIRD

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Our Mission:
To interpret and conserve the earth's
biological diversity through research, education,
and citizen science focused on birds.

LIVING BIRD

WINTER 2004 VOLUME 23 NUMBER 1

GREETINGS FROM SAPSUCKER WOODS

I could not have chosen a more appropriate day than this to write my Winter "Greetings" column. For the past 24 hours, the Ithaca area has been hammered by a snowstorm that shows few signs of abating anytime soon.

Outside the observatory window, Sapsucker Woods looks like a scene painted on a holiday card, with the snow a couple of feet deep and every tree outlined in white.

In the bird-feeding garden, several American Goldfinches perch on a hanging feeder, pulling thistles from the tiny feeding ports. An assortment of Black-capped Chickadees, Northern Cardinals, and Blue Jays work on the sunflower feeders nearby, while beneath them, a couple of Canada Geese and a Mallard probe with their bills in the snow, searching for spilled seeds.

These birds add greatly to the winter season, making the frigid weather and the snow-shoveling chores so much more bearable. To celebrate their presence, we're presenting a photoessay entitled "The Birds of Winter" on page 22.

I know that come March, many of us around here will be complaining about the coldness and drudgery of winter and looking forward longingly to the lengthening days and warmer weather ahead. But for now, I can't think of a better place to be than right here, sitting in the warm observatory, watching the birds of Sapsucker Woods.

We wish you all a happy and prosperous New Year.

—*Tim Gallagher*

Cover: A Dark-eyed Junco perches on a pine bough in the snow. These tiny birds gather in flocks during winter and can often be seen in woodland edges, thickets, and suburban backyards, where they usually forage on the ground. Photograph by Cliff Beittel.

Right: Just over a decade ago, researchers undertook a bold experiment to reintroduce Whooping Cranes to Florida, releasing captive-bred cranes in a wildlife management area on the Kissimmee Prairie. "Lucky," far right, was the first offspring of a captive-bred pair to fledge in Florida. See page 28. Photograph by Maresa Pryor.

Back cover: The Tufted Titmouse is a common bird of the eastern forests and a popular visitor to backyard bird-feeding stations. Photograph by Cliff Beittel.

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LIVING BIRD

WINTER 2004 VOLUME 23 NUMBER 1

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Letters

THE DIGITAL DEBATE

In my opinion, Arthur Morris's digital pictures in *Living Bird* ("Crossing the Digital Divide," Summer 2003) do not have the impact (a combination of color, sharpness, and vibrancy) of either the front or back covers of that issue. Even the Western Sandpiper on page 25 seems to be missing the "snap" of film. I wish Morris had shot a similar picture of the sandpiper on film for purposes of comparison.

Stefan T. Delloff
Pequannock, New Jersey

I'm an amateur photographer. I was using film exclusively until about a year ago when I received a digital camera as a present. Now I use both.

ARTHUR MORRIS/BIRDS AS ART

Although digital photography is a lot of fun, I have not yet converted solely to digital photography. Film will be—and should be—around for a good while longer.

The main attractions of digital—immediate viewing of pictures, lower cost, email potential—are essentially conveniences that will no doubt raise the fun of photography but have little to do with quality and the art of photography. Assuredly, digital will reach the level of film, as Arthur Morris is proving, but then he is an artist and a photographic genius.

I admired the marvelous picture of the Brown Pelican and others in his article, but then I looked at the Brown-crested Flycatcher on the back cover. I felt that the latter looked alive, about to fly off the page.

Rene Prochelle
Port Chester, New York

I was sorry to learn that Arthur Morris has been seduced by the joys of digital photography. Like fast food, it is, as he says, convenient, reliable, and cheap. It has its place and will, no doubt, become the standard for most photographic applications. But if the criterion is image quality, it has a long way to go to be competitive. The Brown Pelican is an excellent shot, the Western Sandpiper only slightly less so, but both are utilitarian images good mainly for identifying the birds. Neither compares favorably to either of your cover images. The Great Egret in flight—the "experimental" nature of which is the core of Morris's argument—is something that could be achieved with a box camera. This is a debate that will go on for a long time and my great fear is that companies will stop improving film at some point. But until that day arrives, we should bear in mind that the world is analog and digital is only an approximation.

Jerry Harkins
New York, New York

We welcome letters from readers. Write to The Editors, *Living Bird*, 159 Sapsucker Woods Road, Ithaca, New York 14850, or send email to <livingbird@cornell.edu>.

Remembering Richard Pough

Famed conservationist Richard H. Pough passed away on June 24, 2003, at his home on Martha's Vineyard. He was 99 years old. We were working on a special issue of *Living Bird* at that time, devoted entirely to the Lab of Ornithology, and were unable to publish a eulogy sooner. But we would be remiss to allow the passing of a man of Pough's stature to go unreported in this publication.

Dick Pough was one of the most remarkable people I've ever met. His personal impact on the American conservation movement was profound. Many of the initiatives he developed and the organizations he worked closely with are still flourishing, and still influenced in many ways by his early leadership. Throughout his life, he seemed to be at the right place at the right time and had the correct vision of what needed to be done.

In the early 1930s, Pough went to investigate an area near Kempton, Pennsylvania, from which a phenomenal number of dead goshawks had been sent in by hunters to collect a state bounty on the birds. He was a camera-store owner in Philadelphia at the time, and he drove to Kempton one autumn weekend to make inquiries. He asked a local farmer where he could go to shoot hawks and was given directions to a rocky lookout called "Hawk Mountain" by locals.

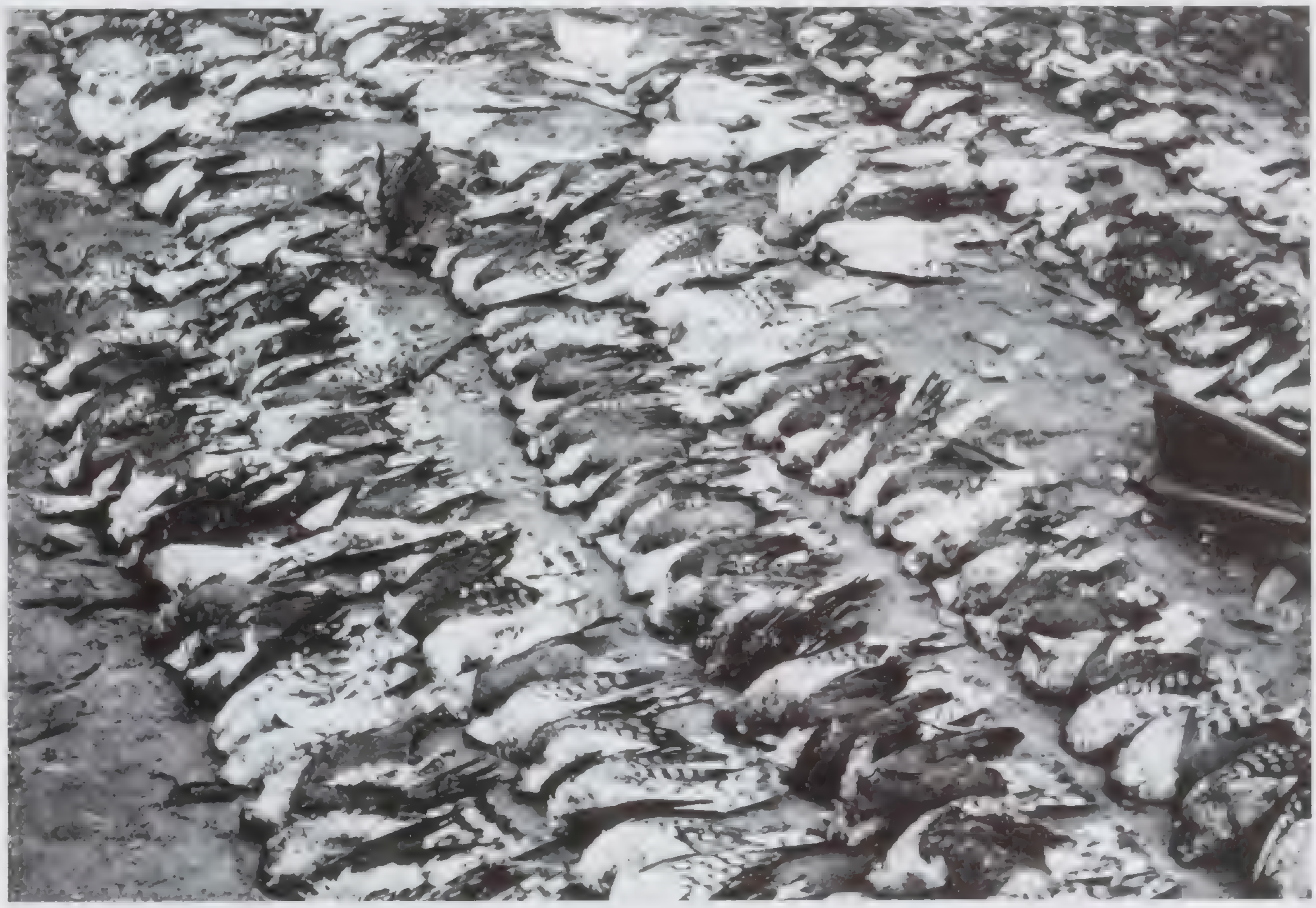
When he got there, he saw more than 50 men with shotguns lined up on the ridgetop, shooting at migrating hawks as they flew past. The carnage below was incredible. He came back later with his brother Harold, and together they gathered several hundred dead hawks and took pictures of them. He showed the photographs to dozens of people and took every opportunity to present lectures about the destruction of these raptors. One of his talks in New York City attracted the interest of Rosalie Edge, a wealthy philanthropist. She leased 1,400 acres in the key hawk-killing area, hired a warden to keep out shooters, and set up a public sanctuary. She eventually bought the land and deeded it to the Hawk Mountain Sanctuary Association, and it is now one of the top bird-watching attractions in North America.

COURTESY THE NATURE CONSERVANCY

Richard H. Pough

Pough worked for the National Audubon Society from 1938 to 1948, during which time he wrote a bird guide, which sold more than a million copies. He was also sent by Audubon in 1944 to check on the small population of Ivory-billed Woodpeckers living in the Singer Tract, near Tallulah, Louisiana. He spent two months in a rustic shack there but only located one of the birds, a lone female, which was the last verified Ivory-billed Woodpecker recorded in the United States (See "The Ivory-bill's Last Stand," *Living Bird*, Autumn 2002). Sadly, the Singer Tract was being heavily logged, and Pough was unable to persuade the lumber company to slow down the pace of their logging or leave part of the area untouched. In fact, the company may have actually speeded up the rate of its tree cutting in defiance of his efforts.

This must have had a profound effect on Pough, because he spent most of the rest of his career trying to figure out how to buy up vast areas of land in key areas to preserve them for wildlife. In the early 1950s, he became a prominent leader in a small group called the Ecologists' Union and radically changed its direction. Renaming it The Nature Conservancy (TNC), he pushed the organization to start saving land as its primary mission. He served as TNC president from 1952 to 1956, during which time the group acquired its first tract of land, a 60-acre stretch of the Mianus River Gorge on the border between New York and Connecticut. He also formed the Land Preservation Fund, which is still The Nature Conservancy's most important conservation tool.



After discovering the slaughter of migrating raptors taking place at Hawk Mountain in the early 1930s, Richard Pough worked tirelessly to put a stop to it.

COURTESY HAWK MOUNTAIN SANCTUARY ASSOCIATION

According to Frank Graham, Jr., of *Audubon* magazine, "Pough was a wheeler-dealer developer turned inside-out, reaching for great swatches of land not to exploit but to retire in perpetuity." This is an accurate description of Pough's efforts. He practically invented the idea of buying up vital pieces of land to preserve as wildlife habitat. As a direct result of his efforts, places like Corkscrew Swamp, Cumberland Island, Congeree Swamp, Great Gull Island, Aravaipa Canyon, Francis Beidler Forest, to name a few, have been preserved for future generations of wildlife *and* humans.

Looking at his lengthy list of friends, it seems like Richard Pough knew everyone. He was a close friend of Charles and Anne Morrow Lindbergh and helped set up the Lindbergh Foundation, a group dedicated to furthering a balance between technological advancement and environmental preservation. He sometimes stayed with famed wildlife ecologist Aldo Leopold in his tarpaper shack near Baraboo, Wisconsin, where Leopold wrote his renowned collection of essays, *A Sand County Almanac.*

Pough seemed prescient at times in the causes he chose to champion. Nearly two decades before his friend, Rachel Carson, aroused the world to the dangers of DDT in her best-selling book, *Silent Spring,* Pough spoke out against the harmful effects of this pesticide. In a 1945 article in *The New Yorker,* Pough declared, "If DDT should ever be used widely and without care, we would have a country without freshwater fish, serpents, frogs, and most of the birds we have now."

My wife and I spent several days with Dick Pough last year, at his home on Martha's Vineyard, and he was a gracious host. He was clearly proud of the island, and he insisted that we borrow his car and go exploring. We traveled all over the island, bird watching in its wetlands and beaches. Pough had done much over the years to preserve the habitats and the character of Martha's Vineyard and was one of the founders of the Vineyard Conservation Society.

You'll remember it was on Martha's Vineyard that the famed "Heath Hen"—a race of Greater Prairie-Chicken that once inhabited coastal areas and islands along the eastern seaboard—made its last stand, before becoming extinct in the early 1930s. I have a feeling that if the "Heath Hen" had held on a couple of decades longer, until Pough turned his attention to Martha's Vineyard, the bird might still be with us.

When we visited him, Dick Pough still had the booming voice and personality of a much younger man, despite his frailty and near blindness. He still talked animatedly at times about his experiences from years before, but he tired easily. He would sometimes spend hours sitting in an easy chair, listening to classical music, and it seemed to soothe and recharge him. He told me that he didn't expect to live to be 100, but he had no regrets.

Richard Pough was a giant and a visionary in the field of conservation, and he will be greatly missed. He is survived by his son, Tristram, his brothers, Frederick and Harold, and two grandchildren.

—Tim Gallagher

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Flying Field

THE SMALL THINGS IN LIFE

by Mel White

It was through the doorway of birds that I entered the infinitely varied and fantastic world of nature

On such small things, I often think in delight and fear, the world can change its course. A little boy is dragged to the symphony, and a single passage of joyful sound shapes a career in music. One rainy afternoon at her grandmother's house, a young woman picks up a certain book—chosen on a whim, perhaps, for the cover—and in the power of words a new writer is born. One day a man takes his car instead of the bus and misses meeting the love of his life.

Each fall, when the first really cool weather arrives, I'm unfailingly reminded of a day that my life changed. It's not a chilly wind that recalls the moment, though, or frost on the window, or the smell of burning leaves, but a high, clear whistle from the bushes in my backyard.

My mother introduced me to birds at some age that more or less coincides with the start of memory. She was not what is considered these days a birder. She called juncos "snowbirds" and House Sparrows "spatzies," though she could call them by their real names if she needed to. She liked the cardinals in the backyard, liked the robin's song, liked telling me that the bird that was making such a racket on the tin roof of our garage was a Yellow-shafted Flicker. We went driving in the country on Sunday afternoons to look for some of the birds that were special to us: bluebirds, goldfinches, Pileated and Red-headed woodpeckers, and, most thrilling of all, Painted Buntings. We would head west from our home in Conway, Arkansas, to where the landscape started looking like Oklahoma, and it became our happy contest to see who could first call out "Scissortail!"—for in those days Scissor-tailed Flycatchers were still uncommon in our part of the world and seemed nearly as exotic to us as toucans.

I had all kinds of bird books, and I'd read the stories and look at the pictures over and over again. I'd seen so few of the birds illustrated in the field guide; the plates were like maps in an atlas of countries that I could only imagine visiting. I had no idea, in fact, that most of the colorful warblers on those pages passed through the woods and fields near us twice a year. But I dreamed. Some of my friends at school knew of my obsession, and they sometimes called me "Birdbrain" in the playground-mocking way kids have. I didn't consider it an insult.

Somehow all this disappeared, went away like the fever of measles. I'm not sure why, all these years later, but I have a couple of ideas. The first was the slow realization that the girls attached to those bouncy ponytails were pretty fun after all. More important, though, I think, was the day the man came into the classroom and asked all those who wanted to be in the band to raise their hands. Music is an awfully big world for a teenager to explore, and so is romance. And if your girlfriend is a majorette . . . Golly, gee.

Still, that nonbird period of my life seems very odd to me now. For a decade I was one of Them: those people who go through life not noticing the Great Blue Heron in the pond, not noticing the Wood Thrush singing in the woods across the street, not even noticing the Red-winged Blackbirds on the telephone line. On one level, I feel like an amnesiac who spent five years selling irrigation equipment in Bakersfield, unaware that a grieving wife and two children and a career as a gourmet chef were waiting back in New Orleans, until one day the office manager sees a newspaper story and says, "Hey, Duane, you look just like this missing person named Jean-Paul Boudreaux," and—bingo. Oh, yeah, that's who I am.

Until one day. My day came when I was 20, in college, back at my parents' house on a gray winter morning. Nobody else was home, and I was sitting on a stool by the glass doors to the patio, talking on the phone. I looked outside and there on the concrete, eating the seed my mother had scattered, was a little brown bird with black-and-white stripes on its head.

As painful as it is to write, I must admit that at this stage of my life I considered myself an intellectual. By this I mean a rational person ruled by logic, knowledge, and empirical inquiry. I mistrusted emotion and sentiment. So I can't concoct some story here of how I was enthralled by this creature's loveliness—and, let's face it, little brown birds aren't going to win any beauty contests, anyway.

What happened was this: I realized that at one time in my life I would have known what that bird was, and I didn't anymore, and I didn't like it. I knew it was a sparrow, of course, but exactly what kind I couldn't remember. I was quantitatively less smart than I used to be in this subject, and that just wouldn't do.

I went to the bookcase and poked

around until I found a bird book. It was my mother's copy of Roger Tory Peterson's *A Field Guide to the Birds*, second edition, copyright 1947, the same one that had been in the car with us on so many Sunday-afternoon drives. I flipped through the pages to Plate 58. Okay, sure: White-throated Sparrows have white throats and White-crowned Sparrows don't. That makes sense. This was a white-throat.

I flipped through more plates and saw birds I knew and many that I didn't. There were the Bay Ducks lined up neatly in black and gray. There were The Commoner Owls (common? I'd never seen an owl) and the Thrushes and the Wrens. There was Plate 54, most colorful of all, with the Scarlet Tanager showing an incised outline where, so many years before, I'd traced around it to practice drawing. I'd never seen a Scarlet Tanager, either, but there was proof that once I'd dreamed.

I looked out into the backyard. I had nothing in particular to do. I wondered how many other birds I could identify, just there through the window. A Blue Jay; of course I knew that. English sparrow, cardinal, starling, robin, grackle, yes. And a couple that (I can't remember) I must have had to look up: Brown Thrasher and junco. And what's that? Frantically looking through the book . . . Cedar Waxwing! My goodness, now they had my attention. That made 10. I decided I'd better start a list.

A list. Do I even need to finish the story? It's not a pleasant analogy, but looking back now, I can't help but imagine a drug addict who's been clean for years slipping up, just once, and in the space of an hour the deed is done. Mockingbird was next on the list and then Mourning Dove and Eastern Meadowlark. Soon I started driving to the lake north of town, where I found coot and killdeer, and to my uncle's farm to find Rufous-sided Towhee and Field Sparrow. My girlfriend was tolerant of being dragged along on these chilly expeditions, and my mother was amused and a little mystified by this sudden addiction, or re-addiction. Her bird-crazy little boy was back.

At the end of a month I had 31 species on my list—a bird a day. Can you believe it? That seems ridiculous now, when any birder can go out and see dozens of species in a single day.

MARK J. BILAK

"On a cool day in fall the whistle of a White-throated Sparrow reminds me of a kind of rebirth, of a small thing that changed my life."

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But I had no idea how to look for birds; I must have just blundered around in a daze. (More importantly, I didn't know songs and calls.) But I'm glad I got started the way I did. I found every one of those birds myself and looked them up, and I can still remember the exact moment for many of them. If an experienced birder had taken me out and shown me 100 birds in a day, my list would be a blur of names—just names, not memories.

Addicted I may have become, but unlike drugs, birds have enhanced my life in ways that I couldn't have imagined at 20. There's a long list of wonderful places I might never have visited but for birds, from Big Bend and Belize to Spain and South Africa. There are friends I'd never have met, diverse personalities whose one commonality is birds, some of whom I've known for nearly 30 years now. And it was through the doorway of birds that I entered the whole infinitely varied and fantastic world of nature. You can't be interested in birds without learning about habitats, about why this species is here and that species is there, and soon the interconnections draw you in the way a beautiful garden tempts you to follow this path and that—though this garden is as big as the planet. It's because of birds that I know the difference between a sugar maple and a red maple, a diamondback water snake and a cottonmouth, an American lady and a painted lady. It's because of birds that I want to know the difference. It's because of birds that I'm so very rich now, in experiences, and possibilities. It's because of birds that I know who I am.

It's because of birds that I'm so very rich now, in experiences and possibilities. It's because of birds that I know who I am.

One April Saturday afternoon two years ago when my mother was very sick I was walking in a park near my town. My sister called and told me I should come to her house quickly. It was 45 minutes or so before I could get there. When I walked into the bedroom where my mother lay her eyes were almost closed and her breathing was heavy and slow. My sister's eyes were shining and red and my brother-in-law looked terribly sad. My mother had stopped breathing about 10 minutes earlier, they said, and they'd thought she was gone, but she had started again just before I arrived. I kissed her on the forehead and held her hand, and soon she really was gone. My brother-in-law put his arm around me. "She just came back to say good-bye to you," he said.

I walked outside and from the field across the road a meadowlark sang. As I stood there on my sister's porch the first Scissor-tailed Flycatcher of the spring flew over.

On a cool day in fall the whistle of a White-throated Sparrow reminds me of a kind of rebirth, of a small thing that changed my life.

Right here on my desk is that 1947 Peterson field guide, the one that traveled in the car with us, the one in which I looked up that little brown sparrow. Its spine is missing, its covers are held together with tape, its corners are bent and worn. On the endpapers—Peterson's black-and-white "Roadside Silhouettes"—are my name and the address of the house where I grew up, in my mother's handwriting. Somewhere along the way, she passed her book on to me. Her book, and a whole universe.

When I first began traveling to odd places around the world, on my own or because someone was paying me, my mother worried as mothers do. But eventually she accepted that this was what I liked, and when I told her of some new plans—hiking in New Zealand or motoring down the Amazon or climbing Kilimanjaro—she would shake her head but give me her blessing. "Go, honey, go," she would say. "Go and have a good time while you can."

I will. I will, and better because of you. ■

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Discovering Vancouver Island

This ruggedly beautiful island off the west coast of Canada offers some of the best birding in the entire country

BY MICHELLE ALTEN

It is seven in the morning and a parade of clouds is moving over deep green forests and placid bays. Artie Ahier, a tall strong man with short-cropped blond hair, is driving me out to look for birds at Vancouver Island's Clayoquot Sound. Ahier is general manager of Tofino's Long Beach Lodge Resort, and he can't resist the opportunity to romp through the mud and point out some of the area's birdlife. As we head in his pickup truck toward the shore, he slams on the brakes and points at a Cedar Waxwing perched on a salmonberry bush. Something is also moving in the trees. He listens and grabs his binoculars. It's a Pacific-slope Flycatcher. Ahier, a passionate birder, seems to have built-in bird radar.

At the end of the road an American Goldfinch alights on a thistle. Its yellow plumage flashes in the morning sunlight. A Belted Kingfisher lets out a loud cackle from its perch in a fallen tree. We scramble through some brush to reach the mudflats, a long expanse resem-

FRANS LANTING/MINDEN PICTURES

Vancouver Island has a spectacular shoreline with rocks, sheltered bays, and deep-green forests, shrouded in mist.

FRANS LANTING MINDEN PICTURES

bling a rich layer of coffee mousse. In the distance, snow-speckled mountain peaks paint a backdrop that would dazzle any landscape painter. Semipalmated Plovers, Black-bellied Plovers, and a Short-billed Dowitcher scuttle across the smooth layer of mud and sand, pausing to prod the wet earth as they search for invertebrates.

On Vancouver Island, off Canada's Pacific Coast, temperate rainforest, ocean beaches, estuaries, mountains, wetlands, and lakes create diverse habitats to support a variety of birdlife. With its many ecosystems, the island is a bird haven and a birder's heaven. There are many destinations and options here for bird enthusiasts. In the spring and fall, the island's fertile eelgrass mudflats and its position along the Pacific Flyway make it an ideal stopover for shorebirds. Fall offers an opportunity to scout out unusual visitors, while winter is ideal for spotting waterfowl that come to take advantage of the region's mild climate. With so many birding possibilities to choose from, I settle on trips to Tofino on the island's rugged western coast and Victoria, an urban bird oasis.

As Ahier and I scan the estuary for shorebirds he explains, "the mudflats here are protected by the British Columbia government. They attract about 50,000 migrating shorebirds each spring." Twelve species of shorebirds, including Western Sandpipers, dowitchers, godwits, Black-bellied Plovers, Semipalmated Sandpipers, and Red Knots, stop here to fortify themselves for their trip north to the Aleutians. In May, Tofino hosts a shorebird festival to celebrate their return.

One morning I head to the Tofino Botanical Gardens. This 12-acre site bordering Clayoquot Sound includes plants native to temperate coastal rainforests. I ramble along a boardwalk through towering old-growth giants, including a 1,000-year-old cedar. At the beach, a blind provides a hideout for patient birders. The shoreline looks out on 5,000 acres of protected wildlife habitat and is another site for viewing migrating shorebirds. Whimbrels, godwits, Dunlins, Black-bellied Plovers, Sanderlings, dowitchers, and tiny Western Sandpipers gather at this popular bird buffet.

It is impossible to truly savor the beauty of the Tofino area and the diversity of its wildlife without heading out on the water. I join fellow adventurers for a tour run by John Forde and the Whale Centre Museum. We pull on red insulated jumpsuits, hop into a 24-foot Boston Whaler, and head out onto the sound. At Deadman's Island we stop to peer through our binoculars at a Bald Eagle nest with a two-month-old chick. The scraggly youngster raises its head into view. It will be a few more weeks before it is ready to fly. British Columbia is known for its healthy eagle population, which thrives on the region's massive salmon runs.

On the water, we spot a Marbled Murrelet diving for fish. Forde, our guide, explains that not long ago these endangered seabirds played an important role in protecting the island's forests. "In the mid-1970s, scientists discovered that Marbled Murrelets nest high in the trees of the old-growth forest," he explains. "This knowledge helped to stop some of the logging on the island." Conservation measures like these have been important for the Clayoquot Sound region. As a United Nations International Biosphere Reserve, the area includes 127 acres of old-growth temperate rainforest, with stands of western hemlock, Sitka spruce, and western red cedar.

As we motor through the sound, a Black Oystercatcher flies over us. Glaucous-winged

FLIP NICKLIN/MINDEN PICTURES

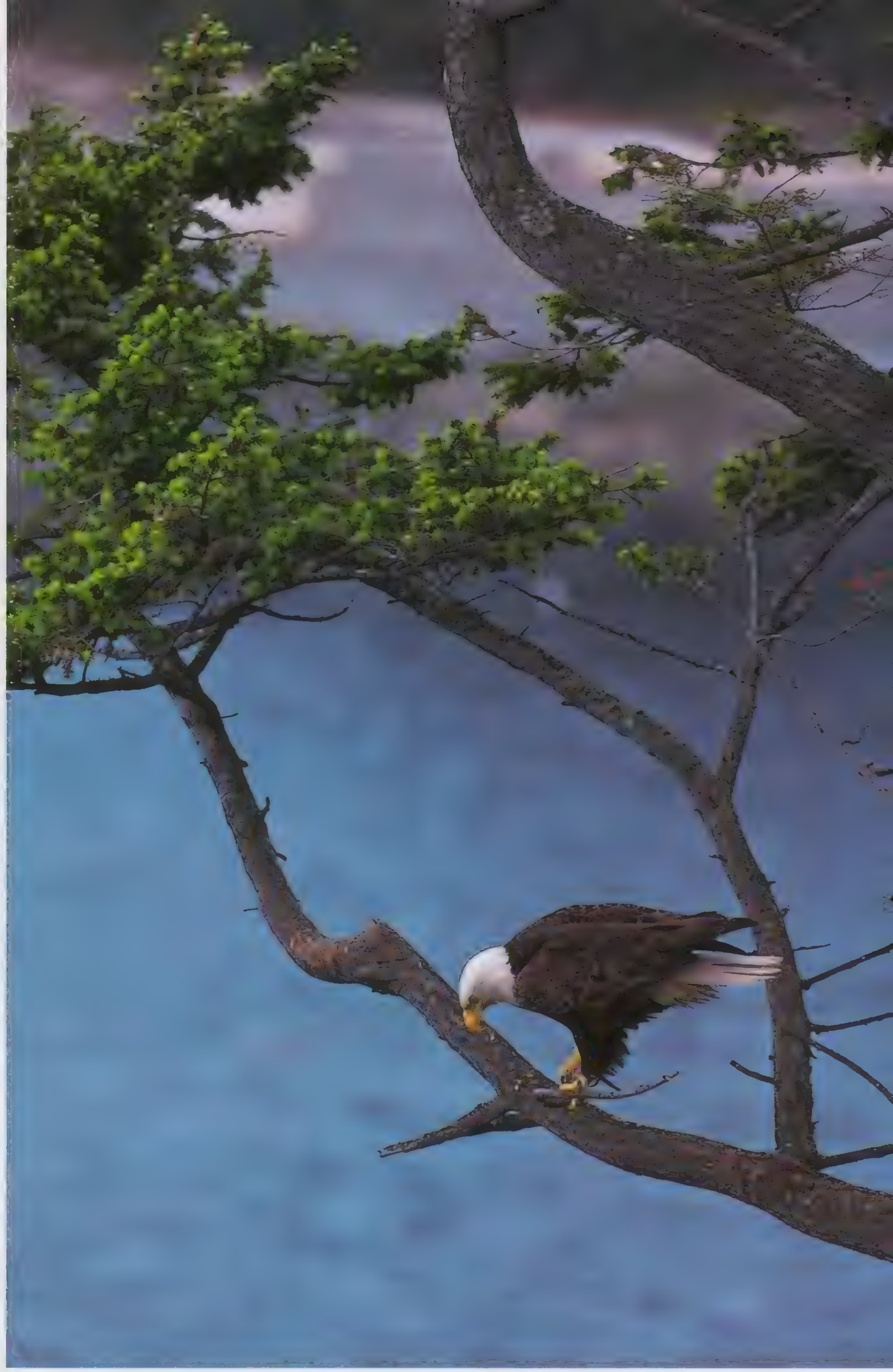
WOLFGANG KAEHLER

Vancouver Island offers a diversity of habitats for marine, coastal, and forest wildlife. At right, above, a massive gray whale raises its flukes just offshore. Thousands of shorebirds, such as these Sanderlings (right), visit the island during their migrations.

Gulls are all around. Their chatter competes with the sound of the sea. Suddenly we catch sight of a gray whale moving slowly along the rocky coast. I'm amazed to see this 40-foot whale so close to shore. "The gray whales have baleen and feed on fish and krill off the bottom of the sea. They sometimes feed in only five to six feet of water," Forde explains. "About 20,000 of them migrate through this region each year."

As we approach Cleland Island, six Pacific Loons appear overhead. A Common Murre and a Pigeon Guillemot bob on the water then plunge for fish, disappearing from sight. Tufted Puffins, Rhinocerous Auklets, and Black-legged Kittiwakes all play this game of hide-and-seek as they search for fish and we search for them. Five Harlequin Ducks perch on rocks along the island's shore. The island appears to be an avian paradise. "Cleland is known as Bare Island," Forde explains. "It became British Columbia's first ecological reserve in 1987. No one is permitted to land or walk here." The reserve has provided protection for the nesting birds and with high tide we delight in excellent bird viewing from the water.

MATTHIAS BREITER/MINDEN PICTURES



WOLFGANG KAEHLER

The Clayoquot Sound area of Vancouver Island is a United Nations International Biosphere Reserve, protecting an area of old-growth temperate rainforest. At left, a stand of massive Sitka spruce. Bald Eagles (above) are a common sight in the coastal areas of the island.

BHL

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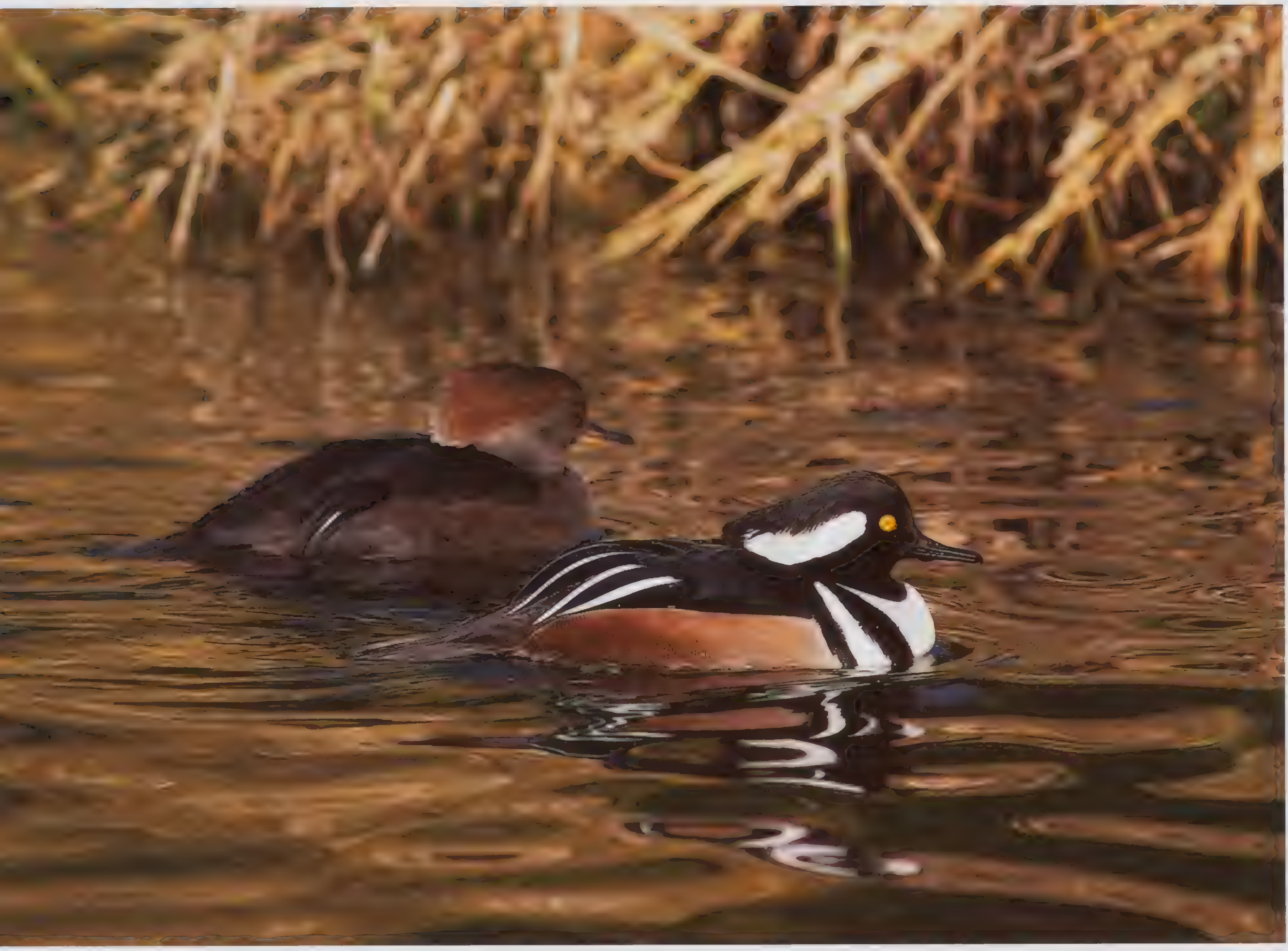

WOLFGANG KAEHLER (2)

A wide variety of waterfowl can be found in the marshes and coastal areas of Vancouver Island. Above, a pair of Hooded Mergansers. Surf Scoters (facing page) can often be seen foraging for shellfish along the rocky shore.

Back at the Long Beach Lodge Resort, a stunning new post-and-beam retreat, Ahier is still happy to engage in bird chatter. "There was a very exciting bird for the lodge last October. It was a Prothonotary Warbler, only the second record for British Columbia," he points out.

In the surrounding forest of Sitka spruce and western red cedar I find a Spotted Towhee and a Varied Thrush. A Pileated Woodpecker lets out a raucous shriek. I wander down to the white sand beach framed with rocky outcrops and contorted krummholtz (trees stunted and sculpted by the wind). A Wandering Tattler scuttles about the rocks at the water's edge on its short yellow legs. A Mew Gull sails the wind currents while a Brandt's Cormorant pokes its head above the restless surf.

In Tofino I meet birder and naturalist George Bradd, who recently launched Just Birding, a bird-watching tour company. "Tofino is known for its storm-blown strays," he explains. "We get some rare sandpipers. There was a report of a Black-tailed Gull, and someone also saw a Gyrfalcon at the airport." In fact, the boisterous storms dashing in from the Pacific Ocean have brought all kinds of unexpected visitors, such as an Oriental Turtle-Dove, a Tropical Kingbird, and a Rustic Bunting. And some years back, local birders were surprised to discover a Falcated Duck.

In contrast with the rugged nature of the island's western coast, Victoria offers terrific urban birding. Victoria is the capital city of the province of British Columbia, and is also, according to author Keith Taylor, "the best bird-finding city in Canada." Situated at the southern tip of the island, it has yearly bird lists of 235 to 245 species. On big days, near the beginning of May, the list can reach 135.

I head for Victoria in the fall, hoping to spot migrating shorebirds and early-arriving winter birds. The city has several birding hotspots. Like many birders who visit the city, I want to catch sight of the introduced Skylarks that come to feed on seeds and insects in surrounding

PLANNING A TRIP TO VANCOUVER ISLAND

For birding tours in Tofino, write to Just Birding, Box 135, Tofino, British Columbia, Canada V0R 2Z0, call (250) 725-8018, or visit the group's web site <www.justbirding.com>. For nature tours in the Clayoquot Sound area that include bird watching, write to The Whale Centre Museum, 411 Campbell Street, Box 111, Tofino, British Columbia, Canada V0R 2Z0, call (888) 474-2288, or check their web site <www.tofinowhalecentre.com>.

It's a good idea to check with local organizations in Victoria before going to see the Skylarks. For information on recent sightings and where to go, call the Victoria Natural History Society at (250) 384-3063 or the Victoria Rare Bird Alert at (250) 592-3381. For more information on birding in Victoria, check out the web site <www.birding.bc.ca/victoria/hotspots/index.htm>. Also read *The Birder's Guide to Vancouver Island,* by Keith Taylor, published by Steller Press Limited.

If you are planning a trip for a birding group, Coastal Connections offers natural history tours including birds in the Victoria area for groups of 10 or more. Contact Coastal Connections at 1027 Roslyn Road Victoria, British Columbia, Canada V8S 4R4. Call (800) 840-4453 or email <coastcon@islandnet.com>.

fields. I take the advice of locals and follow Mills Road to the north side of the airport. The distinctive *chir-r-rup* call comes from a flock of Skylarks flying above the fields. The brown-streaked birds settle on the field below and begin foraging in the grass.

The many parks around Victoria provide a wide variety of birding possibilities. In the fall, visitors head for East Sooke Park to see up to 200 or 300 Turkey Vultures and numerous species of hawks that congregate in late September prior to migration. I check out Esquimault Lagoon to see which species are out on a sunny morning. A Glaucous-winged Gull feeds on a geoduck, an eight-inch shellfish with a long thick protruding neck. The gull's chick promptly chases after it, hoping for a meal. Another gull, flying overhead, lets a shellfish drop to shatter it on the rocks below. Black Oystercatchers wade at the water's edge and forage with their long red beaks for littleneck clams. Surf Scoters, Buffleheads, an American Wigeon, and a pair of Mute Swans ply the placid waters.

Witty's Lagoon is another of Victoria's top birding locations. Here more than 160 species of birds have been sighted. With tidal flats, a salt marsh, and a forest of Douglas-fir, the park is home to a variety of birds. As I follow a forest trail, two California Quail skitter past and slip under the brush. At the shore, Dunlins, Greater Yellowlegs, and sandpipers bring up the tail of the fall migration. Green-winged Teals and Buffleheads paddle the calm lagoon, while jet-black Surf Scoters and murres brave the ocean waves.

"This is also an excellent spot for owling," explains birder June Pretzer, who has accompanied me. She points out the display in the visitors' center of Northern Saw-whet, Barred, Short-eared, Western Screech-, and many other owl species.

In Victoria, I find that the Oak Bay Beach Hotel, on the shore of Haro Strait, makes a great birding base. From the hotel I stroll the public walkway along the waterfront. Two Killdeer slip between the rocks to feed on the beach. A Eurasian Wigeon floats on the water near shore, disappearing occasionally to dive for fish. Hooded Mergensers and Double-crested Cormorants are out for a swim, while Glaucous-winged Gulls soar above the water, fish, and rest on the rocky shore.

At the hotel I pick up a bird checklist, then catch a boat tour to Discovery Island, a provincial marine park established in 1972. Glenn Milbury, biologist and owner of Coastal Connections, a company specializing in natural history tours, joins me as my guide. On the way we pause near the shore of Great Chain Island, a nesting ground for Glaucous-winged Gulls, Pigeon Guillemots, and Double-crested Cormorants. A cluster of 40 cormorant nests constructed of sticks and seaweed rises like smokestacks above the rocks. "There used to be about 600 nests here," Milbury points out, "but the gulls keep eating the cormorant eggs when the adults are frightened off the nests by Bald Eagles. No young have fledged in recent years."

On shore, some of the birds bask in the sun with wings stretched out after returning from a fishing expedition. "The cormorants are great deep divers," says Milbury. "But they have very little oil in their feathers. So when they return they must dry them out."

As we approach Discovery Island, small groups of Harlequin Ducks ply the water, a Bald Eagle takes flight from its perch in a tall fir, and a dozen harbor seals poke their heads from the water to catch a glimpse of us as we approach. Off shore, a Great Blue Heron stands on a kelp bed. "The heron is standing on bull kelp," explains Milbury. "The bull kelp is buoyant but its stem has a fist-sized attachment called a holdfast, which anchors it to the rocks."

In the forest the *dee dee dee dee dee* of a Downy Woodpecker slips through the trees. Chestnut-backed Chickadees and the "Oregon" race of Dark-eyed Juncos flutter from branch to branch, while a Red Crossbill feeds on the cones of a Douglas-fir. Twisted arbutus trees, also known as madronas, are everywhere. Their rich red bark clothes the smooth curves of their trunks and branches. Where the bark peels away, the limbs feel like silk. "The orange Arbutus berries make great bird food in the fall," Milbury explains. "The Band-tailed Pigeons, waxwings, and robins love them."

Near the edge of the forest we approach a clearing. Suddenly a loud shriek halts us in our tracks. A Peregrine Falcon swoops down in front of us as it races after a Northern Flicker. The flicker's red tail disappears into the forest as it escapes on a thread of luck. "This is what I love about birding," says Milbury, "These memorable surprises." Around Vancouver Island, such surprises are seldom in short supply. ■

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GARY KRAMER

A Snowy Owl stands at attention on a fencepost in Washington State. These hardy Arctic raptors are a welcome winter visitor to the northern parts of the Lower 48 states.

The Birds of Winter

An appreciation of the birds that stick around when the weather turns cold

Everyone loves warblers. To birders in the Northeast and other areas across the snowbelt, their bright colors and distinctive songs signal more clearly than anything the end of the frigid weather and the close approach of summer. The down side, however, is that long before the first snowflake falls, these tiny beauties have departed en masse—along with the orioles, tanagers, vireos, and other fair-weather friends—to parts far to the south.

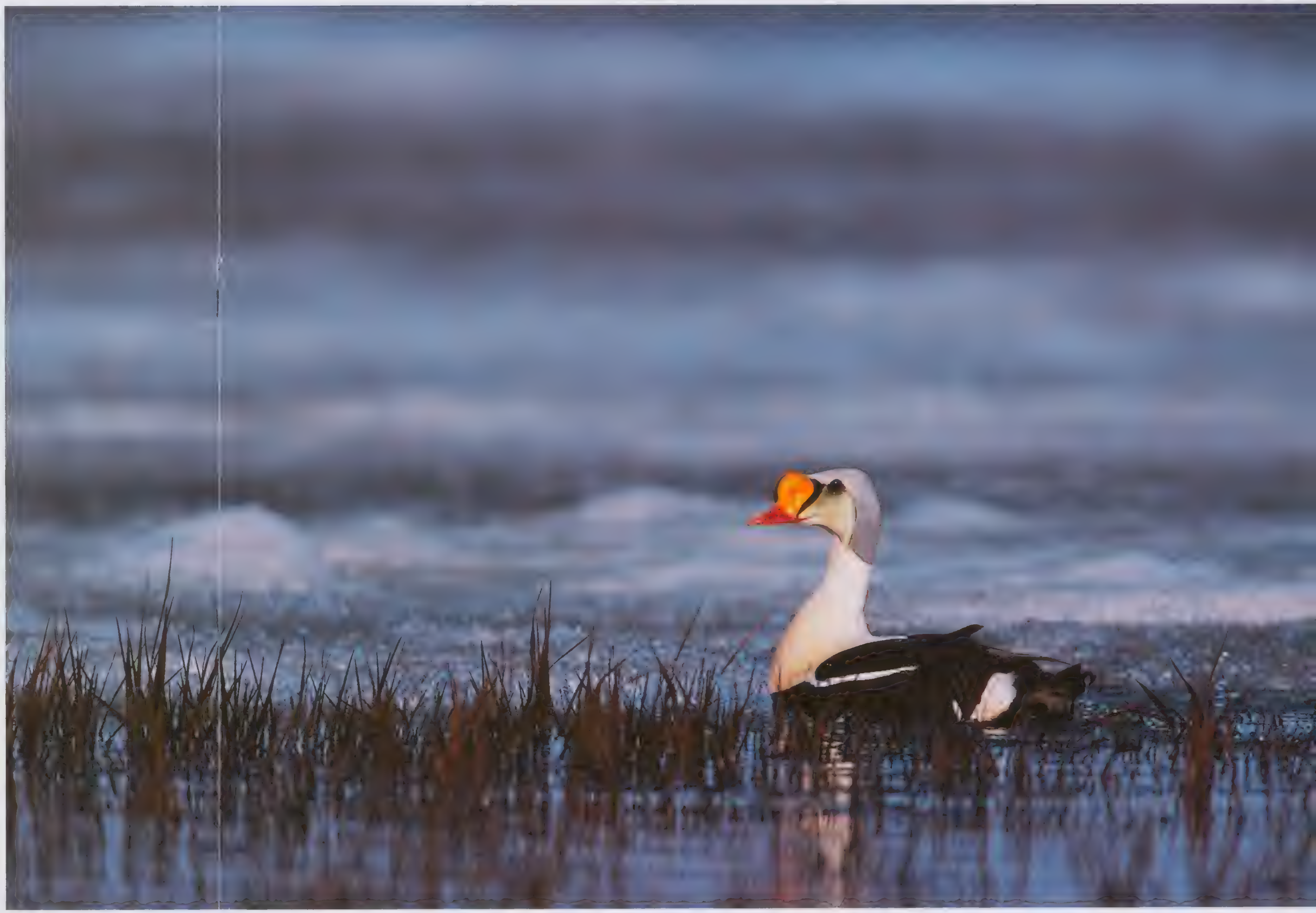
It is only then that we can truly appreciate the birds that stick around, as well as the visitors from far northern climes such as the Snowy Owl. What a bleak place Ithaca, New York, would be in January without the stunning crimson Northern Cardinals and the raucous Blue Jays. Common, yes, but they add an essential dash of color and life to the dreariest days of winter. In appreciation of these stalwart winter friends, we present this portfolio of birds in cold places.

—Tim Gallagher

Eastern Bluebirds lend a touch of color and brightness to the bleakest days of winter in the Northeast. When the insects of the warmer months are long gone, they shift their diet to fruits and other plant foods to survive.

MARIE READ

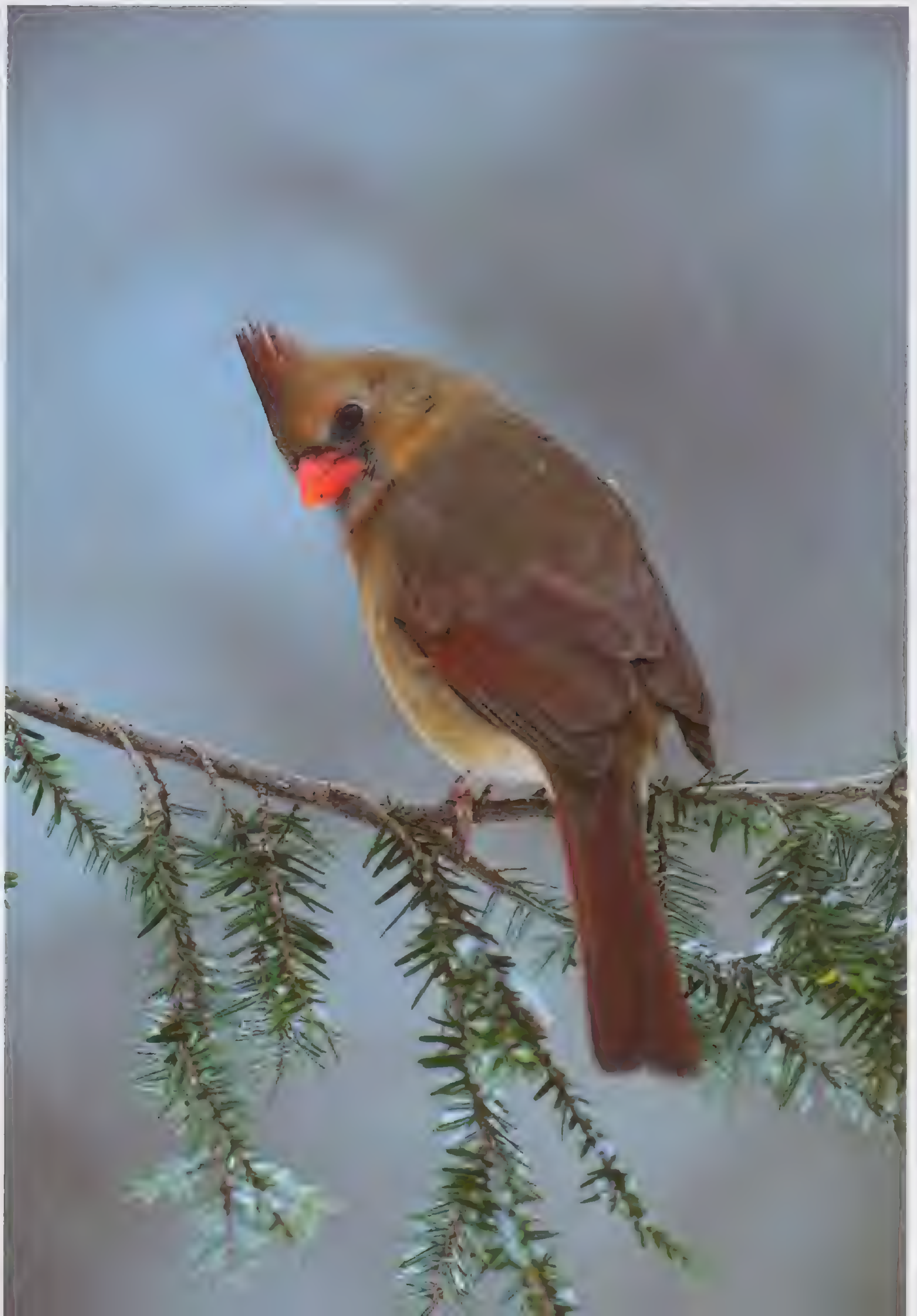
GARY KRAMER



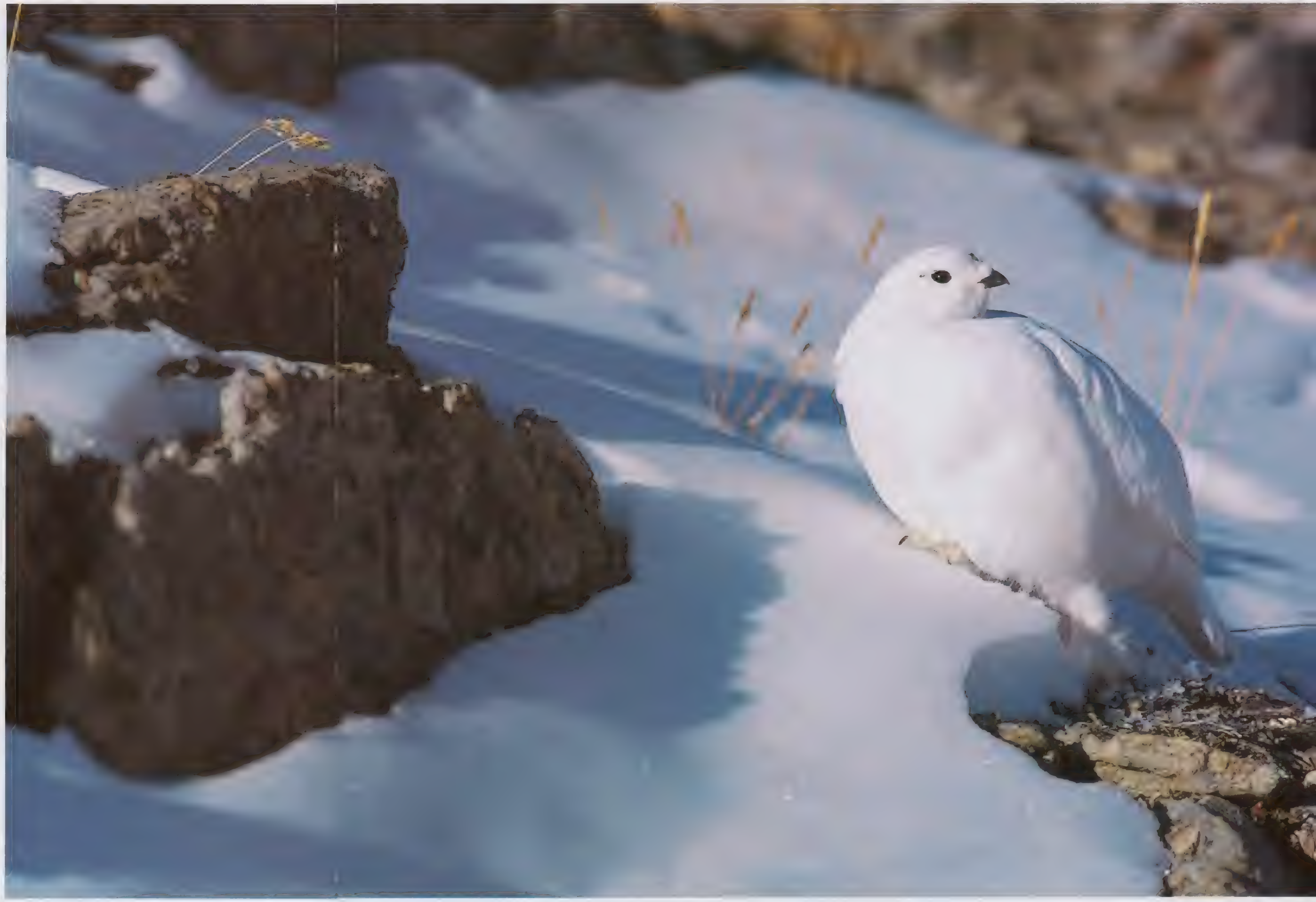
One of the most spectacular of North American waterfowl, King Eiders nest in the High Arctic of Alaska and Canada, but the birds can be seen on the coasts in winter, sometimes as far south as Virginia. In his breeding plumage (which he molts into in December), the male is stunning and unmistakable.

If you look through a few bird magazines, you'll notice how rare it is to see a portrait of a female Northern Cardinal by herself. The males have such a brilliant crimson plumage, they always catch the eyes of photo editors. We thought it was time to give the female cardinals their due, so we're featuring this exquisite portrait to show off the bird's subtle beauty.

CLIFF BEITTEL



GARY KRAMER



The White-tailed Ptarmigan thrives in the coldest places, such as in the high alpine meadows of the Rocky Mountains, where this one was photographed. Their winter plumage matches the snowy slopes so well that with their eyes closed, they seem to vanish.

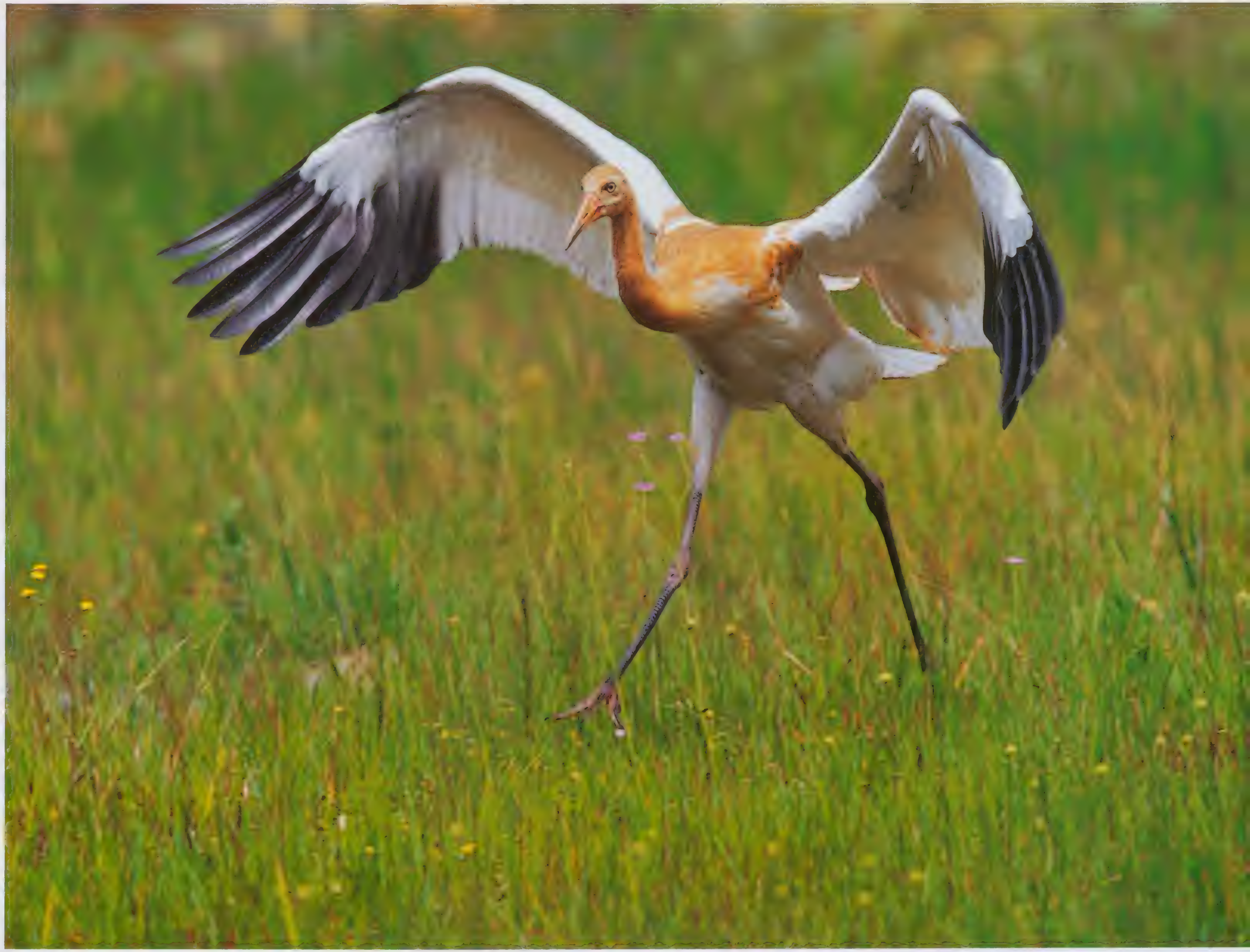
A CRANE *Called* LUCKY

A major milestone in the reintroduction of Whooping Cranes to Florida

BY KRIS W. THOEMKE

PHOTOGRAPHS BY MARESA PRYOR

Everyone was nervous. This was as bold a step as had ever been undertaken with a bird species. On a sunny day in February 1993 on the Kissimmee Prairie within central Florida's Three Lakes Wildlife Management Area, I watched from an observation platform as Florida Fish and Wildlife Conservation Commission biologist Steve Nesbitt coordinated the release of the first Whooping Cranes in Florida in at least 70 years. As the costumed human worked carefully to open the first crate and coax the bird from the box and onto Florida soil, the camera recorded the event for one of the "Exploring Florida" shows, a local Public Broadcasting Service series I hosted. This was a significant moment in avian history and signaled a milestone in the commission's plan to establish a nonmigrating population of this endangered species.



Researchers began releasing captive-bred Whooping Cranes in Florida in 1993, hoping to establish a nonmigratory flock. Nine years later, "Lucky" (above) became the first Whooping Crane to fledge successfully in the wild from captive-bred parents.

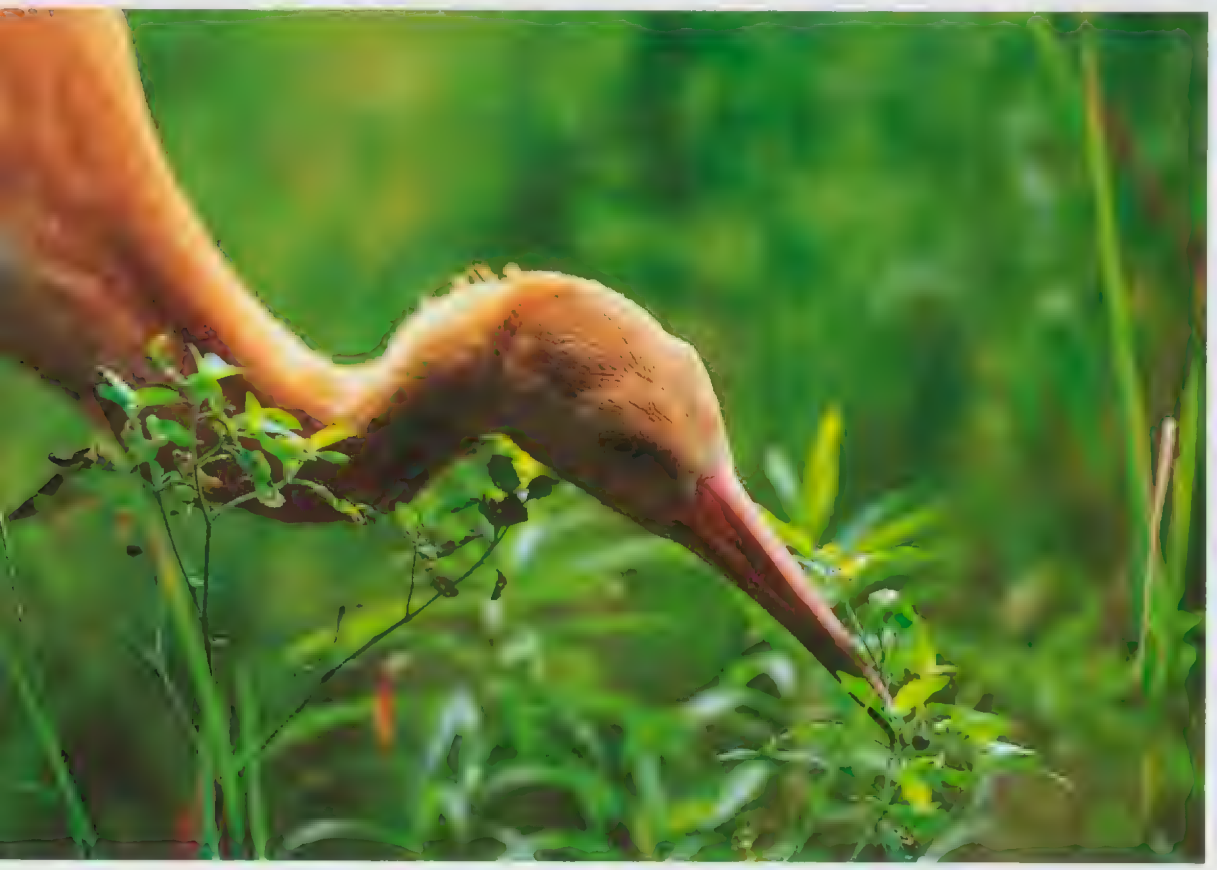
"We had a mixture of optimism and apprehension that day," Nesbitt recalls. "We believed it was going to work because we knew from past research that nonmigratory Sandhill Cranes, close cousins of Whooping Cranes, were doing well in Florida." Nesbitt and his colleagues also had some apprehension because the Whooping Cranes being released were captive-raised birds and did not have the benefit of learning the ways of wild birds from their parents. "As a result," says Nesbitt, "we were extremely careful handling the birds. To approach the birds you had to wear a crane costume and, once the birds were in the holding pen, we watched them round the clock." As it turned out, the researchers learned that most of the problems for the cranes came after their release. "Now we don't bother with the costume because the only time we handle the birds, it's a negative exposure for the cranes and that reinforces their desire not to associate with humans," he says.

Nine years later, a young Whooping Crane that researchers named Lucky stretched his wings, then followed the example learned from his parents and took to the air from his nest. "It was a major landmark in the history of conservation," says Nesbitt. Whooping Cranes once inhabited Florida but the last known reliable sightings took place in the early 1930s. Regardless of this stately bird's history in Florida, the release of the first of 14 birds marked a new day in the long-term plan to bring Whooping Cranes back from the brink of extinction.

Whooping Cranes have probably always been somewhat rare. Their population may never have exceeded 10,000 birds. As the human population grew in North America, untold amounts of marshland—the Whooping Cranes' preferred habitat—were drained to provide more agricultural land. The birds began a steady slide toward oblivion, hastened by hunting and egg collecting during the 19th and early 20th centuries.

By 1941 only 15 birds remained, and many people thought the Whooping Crane would soon join the growing list of extinct species. At the time, only three females were known to exist, which signaled a dangerously reduced gene pool for beginning a future recovery plan—a plan that had not yet been conceived and wouldn't begin in earnest for years.

Lucky forages for berries (below). On the facing page, Lucky watches as one of his parents demonstrates the crane dance.



Two unrelated events led to Florida becoming one of the sites where scientists decided to release captive-bred Whooping Cranes. First, in the 1960s scientists began removing some of the eggs from the Wood Buffalo population of Whooping Cranes, the last remaining flock, and placed them in captivity as a last-chance effort to save the species. Wood Buffalo is a National Park in Alberta, Canada, where the migrating flock spends the spring and summer before flying south to winter along the Texas coast at Aransas National Wildlife Refuge.

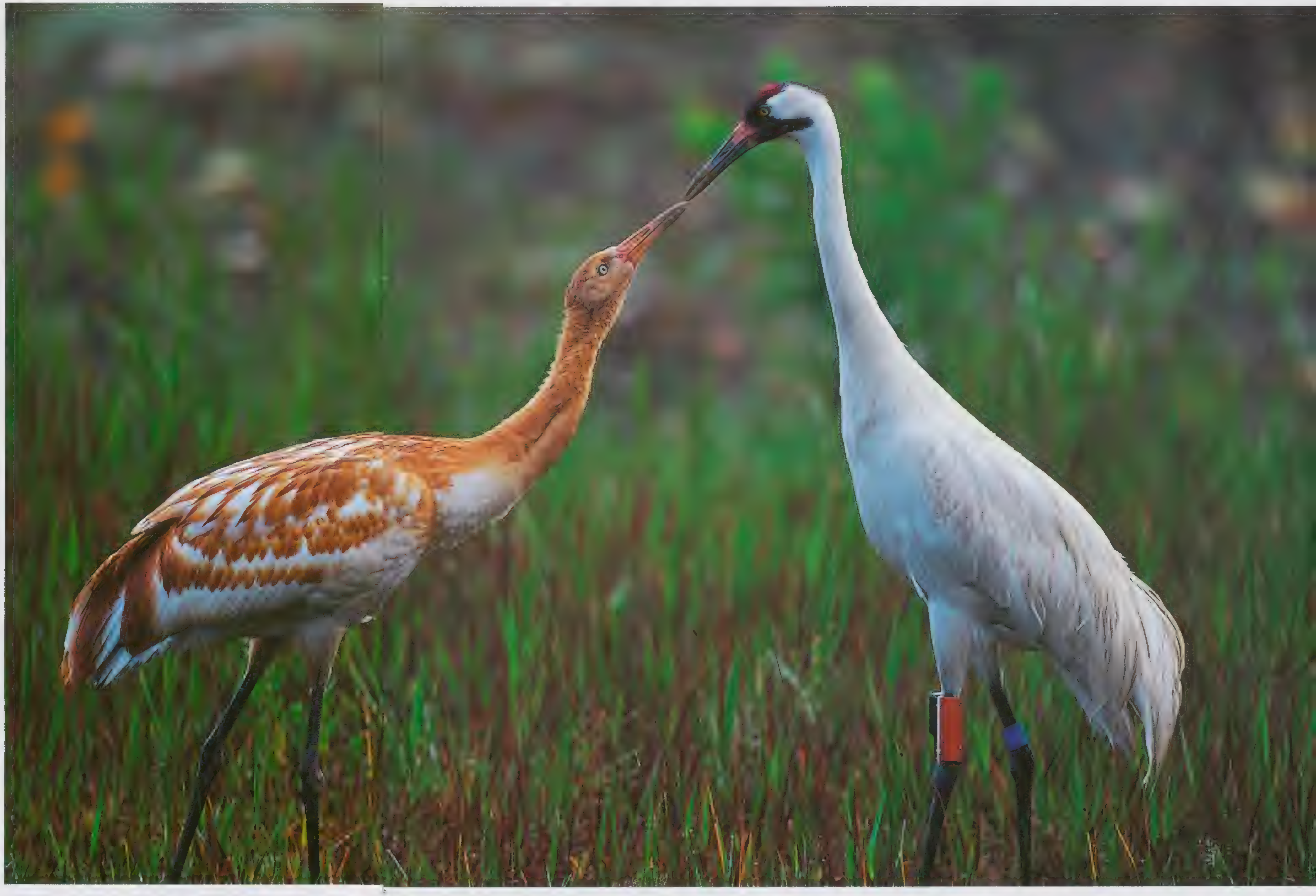
About the same time, scientists working for the Florida Fish and Wildlife Conservation Commission discovered that the state had a permanent nonmigratory population of Sandhill Cranes as well as a small migratory population. In 1974, Nesbitt joined the commission to carry on the agency's research projects on Sandhill Cranes. Five years later, initial discussions between the commission and the U. S. Fish and Wildlife Service's Whooping Crane Recovery Team led Nesbitt to begin the initial field work that would pave the way to establishing a population of Whooping Cranes in Florida.

"We received approval to start the reintroduction project in 1980 and first had to determine whether migration is a learned or a genetically inherited behavior in Sandhill Cranes," he says. "These birds were an ideal species to study because of their close relationship to

Whooping Cranes." Results of the research strongly suggested that migratory birds could establish a nonmigratory population. Having a similar species to test some of their ideas about how to conduct a reintroduction program gave the research team confidence that bringing Whooping Cranes to Florida would work. "Studying Sandhill Cranes was a great opportunity and we anticipated it would significantly enhance our chances for success," Nesbitt says.

The commission presented the results of their research to the recovery team in 1988. Two years later the state agency received approval to begin releasing Whooping Cranes in Florida. The reintroduction plan, if successful, would make a major contribution toward the recovery team's goal to downlist the Whooping Crane from endangered to threatened and eventually to remove the species permanently from the federal Endangered Species List.

Averaging 15 pounds and standing nearly 5 feet tall, the Whooping Crane is the tallest bird in North America. The conspicuous bird is nearly all white with black wing tips and has a wingspan of 7 to 8 feet. Whooping Cranes also have a distinctive patch of rough red skin on the crown of their heads. By changing color, the birds communicate their mood—brightened and enlarged if the bird is aggressive, dull and contracted if it is subordinate and nonaggressive.



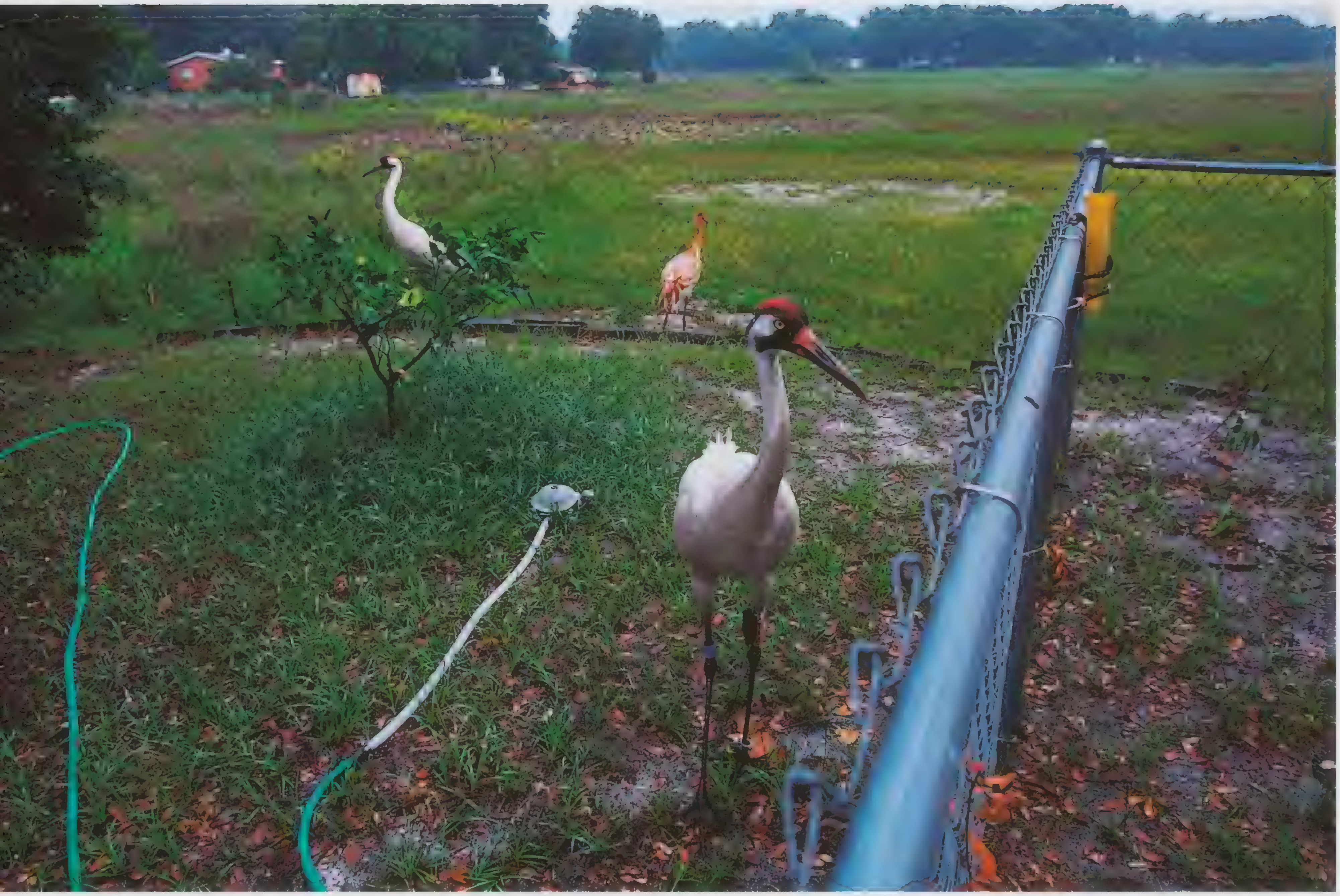
At three months old, Lucky (below) is seen preening its wing feathers. At right, Lucky is fed by one of its parents.

In 1993, the first year of the reintroduction program, researchers released 14 birds. Every year since, between 19 and 48 young cranes raised in captive-breeding facilities at Patuxent National Wildlife Refuge and the International Crane Foundation in Baraboo, Wisconsin, were transported to Florida for release. Using a soft-release technique, scientists first place the new arrivals in specially constructed enclosures that protect the birds from predators and give the cranes a chance to acclimate to their new surroundings before being released into the wild.

Despite the efforts to give these birds the best chance for survival, annual mortality is high. During the first two years an average of 66 percent of Whooping Cranes died within the first year after release. Most of these young cranes were killed by bobcats. Beginning in the third year, researchers began using a portable acclimation enclosure set up in marsh areas thought to be optimal for cranes and less favorable for bobcats. In subsequent years the first-year mortality rates decreased to an average of 30 percent. The unforeseen drought that began in 1998 added a new stress and boosted the birds' first-year mortality rate to 50 percent, still an acceptable level.

With 268 birds released since the program started in 1993, the average survival for the first year is 50 percent. Mortality in the second and third years is 17 percent. After four years the birds' mortality rate drops further. "When we first started the project, we predicted 40 to 60 percent first-year mortality, and that's what we are seeing," says Nesbitt. The bottom line is there are 106 birds living in the wild as of April 2003.

The first Whooping Crane reintroductions took place on state-owned land in locations researchers believed to be optimal crane habitat. Once released, the birds quickly left these areas to find their own version of the best crane habitat. "Because the birds were free to fly, they led us to where they wanted to live, which turned out to be on marshes on private land," Nesbitt explains. "So, we followed the birds and met the landowners. Nearly all of them were receptive to our plan to reestablish the Whooping Crane in Florida, and they worked with us. Now 100 percent of our releases take



When the Florida Whooping Crane reintroduction began, researchers released the birds on state-owned land in what they believed was optimal crane habitat. The birds had other ideas and soon moved onto privately owned areas. Fortunately, most landowners have welcomed their presence.

place on private land." Success with the landowners was possible because the U.S. Fish and Wildlife Service designated the Florida population as "experimental nonessential." As such, it alleviated the restrictions many landowners feared would suddenly affect their property rights if a Whooping Crane decided to take up residence on their property.

The first sign of impending success came in 1996 when a pair of Whooping Cranes starting building a nest. Although they did not lay eggs, their nesting attempt showed that the recovery program was moving closer to its goal of having Whooping Cranes raise young in the wild in Florida. Three years later two pairs of cranes laid eggs but predation and floods destroyed the nests before the eggs hatched.

Whooping Cranes usually mate for life. The birds are long-lived, with some surviving 22 years or more. Adults seldom produce eggs before the age of four. Once they reach reproductive age, females typically produce two eggs per nest but usually only fledge one chick. In Florida the nesting season usually begins in January and can run into May if some birds renest.

Nesbitt and his colleagues never expected instant success. "Whooping Cranes, like Sandhill Cranes, hardly ever succeed in nesting on their first try," says Nesbitt, "so we weren't surprised with the initial failures and would have been surprised if the captive-raised birds performed a miracle and were successful on their first try." Nesbitt adds that they did expect the birds to learn about raising chicks and gradually become better parents as they repeated the process.

The 2000 nesting season produced three nesting pairs. One pair of four-year-old birds successfully hatched two chicks, the first Whooping Crane chicks hatched in the wild in the United States in 60 years. The young cranes face significant dangers before they are old enough to survive on their own. "Crane chicks go through two periods of heightened mortality risk before they can fly," says Nesbitt. "The first period occurs between hatching and three weeks of age. The second is between 60 and 75 days of age, just before they fly for the first time." The adults came tantalizingly close to successfully raising young. "One of the chicks disappeared at about 10 days of age from unknown causes," he says. "A bobcat killed the second chick within a week of its being able to fly."

The long-anticipated event occurred in the spring of 2002, when a pair produced two chicks, one of which—now you see why he's known as Lucky—became the first Whooping Crane to be successfully fledged in the wild from captive-born parents. "There are fewer than 400 Whooping Cranes in the world, and this event is a significant achievement in our efforts to restore the Whooping Crane to its former range in the southeastern United States," says a delighted Nesbitt.

Hatched in 1998, Lucky's parents were less than four years old when they nested. Also working against them was the fact that they are a brother-and-sister pair. "Knowing this didn't help our sense of optimism," says Nesbitt. "But you have to keep in mind that all the Whooping Cranes alive today are descended from the only three females alive in 1941, the low point in the bird's history."

Lucky's parents chose their nesting site on land near Leesburg owned by Gene and Tina Tindell. "I didn't know what Whooping Cranes looked like, but we knew those birds were something special when we saw the radio transmitters attached to their legs," says Gene. Soon their curiosity was satisfied when a researcher from the commission who was following the birds came to their house. Enthralled that the cranes chose their property to build a nest, the Tindells became the cranes' biggest supporters and eagerly assumed the role of volunteer observers. "Tina would come home every day to eat lunch and watch the birds," Nesbitt says. "Then she would go back to work and tell everyone what the birds were doing." With their many hours of observations, the Tindells have witnessed more of the behavior of a Whooping Crane family than anyone in the world.

News of the event spread rapidly in the region and attracted wildlife photographer Maresa Pryor. Living in nearby Bushnell, Pryor photographed Lucky as the bird grew up and was there the day he decided to test his wings. "The male parent received an eye injury from what we assumed was an attack by a pair of Red-winged Blackbirds," says Pryor. His eye was closed for two weeks. In the second week it looked as if Lucky was staying closer to the male." Pryor captured this in a photograph of Lucky beak-to-beak with his father.

The Whooping Crane team celebrated this milestone, but only for a short time. The project is still not complete. "We are close to the goal of having a self-sustaining population of Whooping Cranes in Florida in terms of numbers," says Nesbitt. If nesting and fledging success increases, scientists hope the population will become self-sustaining. That will require maintaining a steady population of 25 breeding pairs and a permanent population of 100 to 125 cranes, in Nesbitt's estimation. "We will continue to release birds, but the number we have to release is declining. Eventually we hope to release only the number of birds needed to replace annual losses not produced by the population," he says. "We may also try some egg replacement." Because of the genetic bottleneck originating in 1941 from only having three founder lines, expanding the gene pool will greatly help future mating to succeed. "Cranes are amenable to some human incursion of their nests," says Nesbitt. "They will raise different eggs from the ones they lay."

That Lucky survived and is still alive more than a year after fledging may be a testament to the Whooping Crane's innate desire to survive. "Lucky's parents were amazingly attentive and as good as any Sandhill Crane parents I've seen," says Nesbitt. "This is a major validation of the work to save this endangered species." The birds are doing everything they need to do. In years to come the reintroduction of Whooping Cranes in Florida should be a project everyone points to as a complete success. ■

FLORIDA WHOOPING CRANE UPDATE

The central Florida Whooping Crane flock responded favorably to increased water levels and set records in 2003 for the most nests (eight) and most fledged chicks (three). One pair lost two chicks, but then renested and successfully fledged a single chick. Six of the eight nests hatched chicks, quite an improvement over the two of fourteen nests that hatched chicks during the drought years. The pair that fledged the first Whooping Crane chick (Lucky) in 2002 were successful parents again in 2003, raising Lucky II. Lucky I left his parents and is hanging around with other Whooping Cranes, including some of the captive juveniles released in 2003. The survival rate of the 13 juveniles released in the winter of 2002–2003 was excellent. Only one of the juveniles died, after a collision with a power line. And another bird suffered a broken leg but eventually regained the use of its leg, although it now walks with a limp.

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In the Field

THE ROBINS OF BURNT CAPE

by Jack Connor

In praise of the ubiquitous American Robin

My birder's biases being what they are, I can't remember now where each of the birds of home dropped away as my wife and I drove north to Newfoundland last summer. Did we encounter no more Carolina Chickadees after we left our driveway? Did the last Northern Cardinal cross our path somewhere near the top of the Garden State Parkway, as I seem to remember vaguely? I think we saw a mockingbird on the roadside somewhere in Connecticut, which would have been 200 miles into the trip, and I am pretty certain a Red-bellied Woodpecker roller-coasted over our heads somewhere in central Maine, 500 miles into the trip. But I wasn't paying much attention. Like most birders heading into *terra incognito*, I was focused only on the new and unfamiliar.

By the time the ferry docked at Argentia on the island of Newfoundland, the easternmost land mass in North America, more than 1,200 miles from home, I wanted nothing more to do with any birds we could see in our own backyard. I wanted puffins, murres, fulmars, ptarmigans, ravens, caribou, whales, and icebergs. And we found them . . . eventually. First, though, we found a lot of robins. Each time we stopped the car, in fact, and I tried to point out the Pine Grosbeak or Mourning Warbler hiding in the greenery, the same, all-too-familiar species disrupted my fantasy. "Hey! Hey! Get on this bird down in the bushes!" I'd call to Jesse. "Might be a . . . Could be a. . . . Wait, forget it, never mind, sorry. It's only a robin." *Tut-tut,* the robins answered back, *tut-tut.*

"What are they doing here anyway?" I kept asking in self-defense. Yes, Newfoundland is wild and beautiful, just as the books say: you will see warblers and sparrows by the dozens, tens of thousands of nesting alcids, whales you can watch from shore, orchids and pitcher plants in every bog, rocky streams bubbling with salmon, boreal forests stretching to the horizon in all directions, and moose so numerous they are a traffic hazard. But I couldn't shake that nagging feeling: Can this place really be so special if *robins* live here? I felt like the wannabe-macho guys in that television commercial who drive their mud-splattered four-wheeler up what seems a virgin mountain, only to discover a suburban family in a minivan already parked at the top, drinking milk and eating cookies.

If any avian species symbolizes suburbia, it's the American Robin. Is there a birder anywhere still hoping to add robin to his yard list? Is there a bird watcher anywhere who hasn't seen one—and then looked right past it in search of a "good" bird?

But let me tell you something I learned about robins last summer: you can't lose them. We found them along the road leading into Cape St. Mary's Reserve and saw them again on the way out; we found them at Witless Bay on Newfoundland's east coast, in the boreal forest in Butterpot Park outside St. John's, along the Trans-Canada Highway passing through Terra Nova National Park, near the serpentine Tablelands on the west coast of the island, along various wooded trails in Gros Morne National Park, in the parking lot of our motel in Cowhead, in the little boreal forest at Point Riche Wilderness Reserve far up the northern peninsula, and in countless other places where I tried my best to ignore them or misidentify them.

Birds of all kinds became so scarce as we neared the farthest point in our journey—the Burnt Cape Ecological Reserve at the extreme northern tip of the island, a windswept landscape of limestone barrens—that our focus shifted to botany. Burnt Cape has the longest winters and shortest growing season of any place in Newfoundland, and is generally recognized as the most arcticlike spot on the island. On the late July day we visited, we had to pull on our gloves, zip up our jackets all the way, and stuff our hats into our pockets so they wouldn't blow across the Gulf to Labrador. We were told that a couple of summers ago a polar bear swam up and clambered around on the Burnt Cape rocks. I can't imagine he stayed for long. What would keep him? Only the hardiest of plants can grow there—arctic species such as dwarf hawksbeard, Fernald's braya, and Lapland rosebay. One species, the Burnt Cape cinquefoil, *Potentilla usticapensis,* grows nowhere else in the world. Most plants hunker down, finding little bits of soil scattered here and there between chunks of limestone, and they stand only a few inches tall. The juniper "trees" crawl over the rocks, like a bonsai experiment gone bad.

We didn't expect many birds here, and, in four hours of hiking and searching, we saw no hawks, no ducks, no terns, no woodpeckers, no jays, no ravens, no warblers, no sparrows, no finches, and not even a single gull. In fact, we saw only two individuals of a single species. By this point I had finally learned what to expect and knew what they were—foraging together in a little cluster of junipers—even be-

ILLUSTRATION BY JOHN SCHMITT

Even at the extreme northern tip of Newfoundland, in the most inhospitable, arcticlike environment on the island, you'll find robins—and not much else.

fore I lifted my binoculars. "Get on these birds!" I shouted. "They're *robins*!"

Heading home soon after, driving back again toward the birds of our backyard, I had three days of driving to contemplate (among other things) why robins get so little respect among birders.

Take a look in a field guide and you'll see their range is enormous. They breed from the Florida panhandle up through all of eastern North America to the northern tip of Newfoundland and west across the provinces of Canada through nearly all of Alaska, out to the Bering Strait. Their range also continues south along the West Coast far into southern California and even deep into southern Mexico along the Mexican highlands. The range map in *The Sibley Guide to Birds* shows they can be found year-round in at least some parts of every state in the Lower 48. Obviously, suburbia is not the only place where they prosper, but represents just one of dozens of habitat types they have mastered. A handful of other North American species might be able to claim similar, continent-wide ranges—Great Horned Owl, Song Sparrow, Sharp-shinned Hawk, perhaps Bald Eagle and one or two others—but can any of them match the robin in numbers? Probably only the Song Sparrow (another underappreciated species) comes within an order of magnitude. I have several times witnessed flights of robins at Cape May Point that left even the most jaded and rarity-obsessed of birders staring upward and shaking their heads. The largest in my experience—on October 30, 1988—involved tens of thousands of birds, probably more than 100,000, and all of them passed by in just two or three hours. The two largest robin flights on record at the Cape May Bird Observatory were much larger still—an estimated 200,000 robins on November 4, 1995, and more than half a million robins just this past fall, November 8, 2003. In both cases all individuals poured across the sky in just a couple of hours.

Why do so many birders underappreciate the robin? Why do we notice them only when we see them in tremendous numbers or find them in some far-off place? Familiarity breeds contempt, of course, and that is certainly a factor. The robin is almost certainly the most familiar of all North American birds. Another factor has to do with our love for the underdog, I think, and our indifference to the surpassingly successful. "No one roots for Goliath," Wilt Chamberlain supposedly once complained. It may be that robins have proven themselves too successful for our tastes. They are such obvious champions everywhere they go—which is just about everywhere—that we dismiss them and their strengths.

In any case, the next time you spot one and complain, "It's only a robin," you should listen close. *Tut-tut,* the robins will tell you, *tut-tut.* ■

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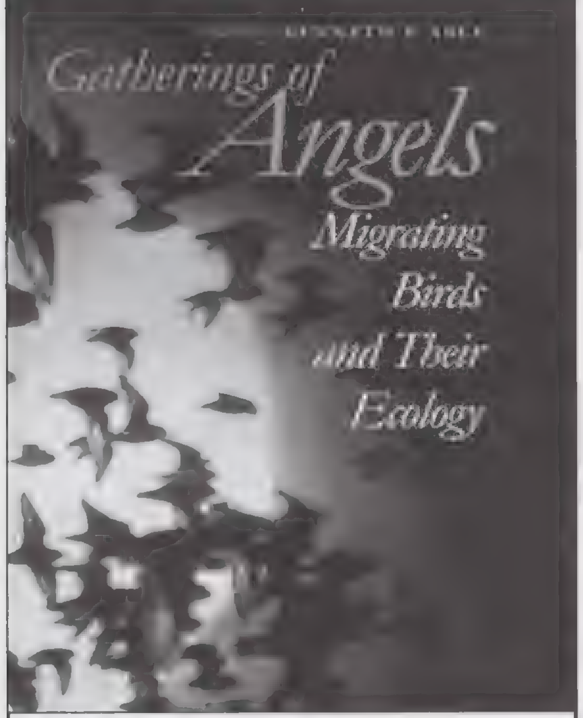

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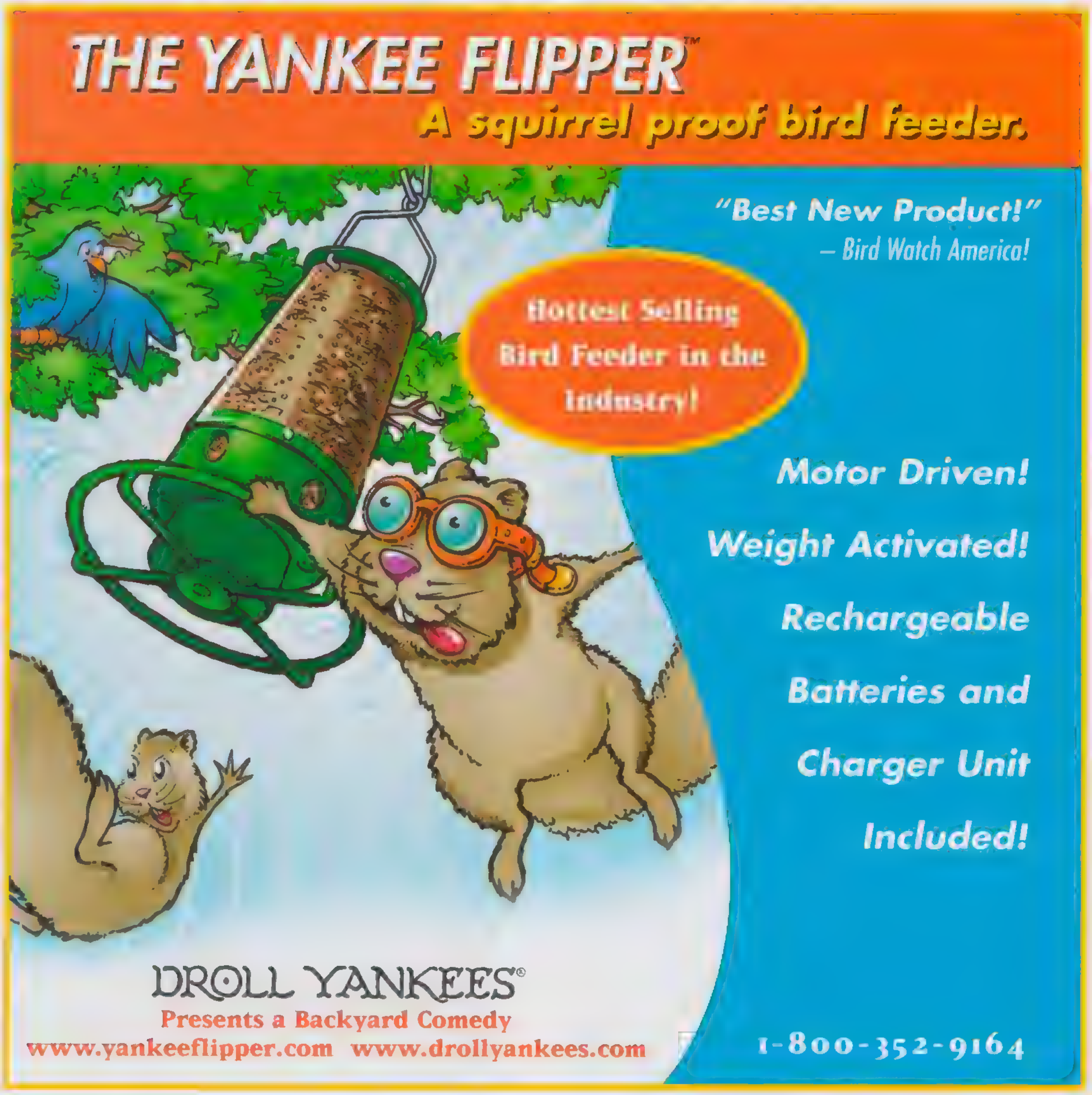

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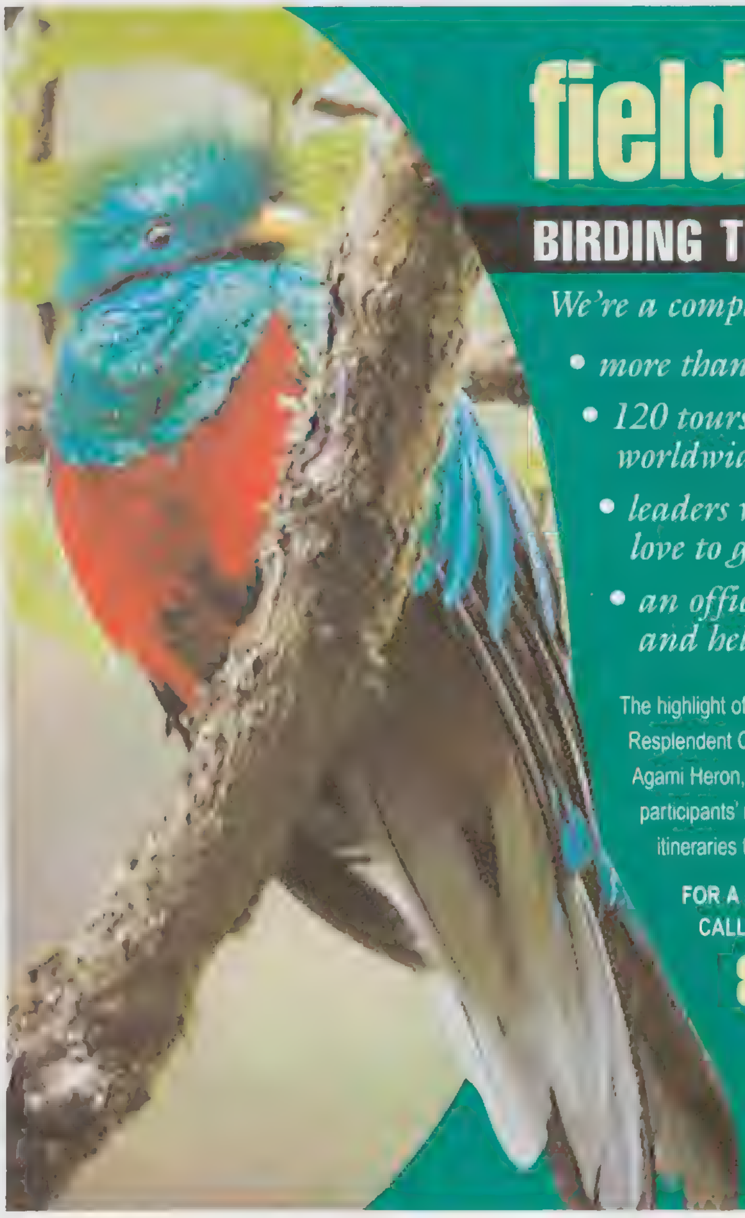

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EAGLE DREAMS

by Stephen J. Bodio

(New York: The Lyons Press. 2003)

I always look forward to reading a new book by Stephen Bodio, and this latest work, about his travels in the wilds of Mongolia, is no disappointment. Besides being an excellent birder and all-around naturalist, Bodio is a keen observer of human nature and culture. His curiosity is boundless, as is his openness to new experiences.

Some readers may recall Bodio's earlier book, *Aloft: A Meditation on Pigeons*, which was praised by Roger Tory Peterson and many others. A "meditation" is a good description of most of his books. Each one—from his early work, *A Rage for Falcons*, to his masterpiece, *Querencia*—is a book-length personal essay expressing Bodio's deepest reflections. And *Eagle Dreams* is no exception.

Eagle Dreams starts with a vivid image Bodio has held in his mind since early childhood—a picture he saw in a magazine in the 1950s of a Central Asian man in ethnic clothes with a wolf-skin hat, sitting astride a pale gray horse. But what was most astonishing to young Bodio is what the man carried: "On [his leather-sheathed arm] stands a bird nearly as large as the man. It is black and gold, with a great curving hook of a beak, and it is looking at me." This image stuck with him dreamlike for decades, somewhere on a back burner of his mind, waiting to flare up.

After the collapse of the Soviet Union, the impenetrable political barrier around the countries to the east of Russia came down virtually overnight. Visitors from the West were able to move freely through Mongolia and other far-flung republics, and information began to flow from this long-suppressed region. Bodio began hearing about people who hunted with eagles in the wilds of Mongolia and seeing pictures similar to the one he remembered from childhood. Could it be that these people still practiced this ancient craft as they had for millennia? He was determined to see for himself.

Eagle Dreams is broken into three major sections: the first is a lengthy setup to the journey, the second the journey itself, and the third a follow-up visit to Mongolia a couple of years later. In an author's note at the beginning of the book, Bodio tells readers to feel free to skip the first section if they'd rather just read the travel narrative. Don't listen to him. This section, entitled "Dream," is an essential introduction, as Bodio explains what the dream means to him and also mines the works of earlier scholar-adventurers, such as Roy Chapman Andrews, the fedora-wearing, whip-cracking prototype of Indiana Jones, who traveled through these areas in the 1920s searching for dinosaurs.

In *Eagle Dreams*, you'll find things you'll never see in a travel guide—maybe things you don't want to see. His description of a six-hour flight across Mongolia in an aging Soviet-era jet with balding tires, broken seats, and a permanently out-of-order restroom is both hilarious *and* terrifying. Especially the part about the two elderly women who sat behind him, each carefully cradling a five-gallon plastic jug of gasoline on their laps, while a man in a fur hat sitting two rows ahead chain-smoked nonchalantly, oblivious to the gas fumes permeating the passenger cabin.

Bodio travels far overland in search of the eaglers, "on the far side of the Gobi Desert and enough roadless plains to fill up both Dakotas, Wyoming, and Montana put together." He finds a harsh, unforgiving land. "The cold was startling, profound," writes Bodio. "I have lived in Montana in winter . . . this was different." He had to travel hundreds of miles in a four-wheel-drive vehicle. Often, what looked like a road on the map became a dry braided riverbed full of stones, a mile or two wide. As he traveled, the centuries seemed to peel away. "[We] found ourselves in A.D. 1200."

Bodio does finally achieve his dream. He meets several eagle hunters and stays with them in their traditional gers (large, felt tents sometimes called yurts). He accompanies them on hunts as they ride their small, sturdy horses up and down impossibly steep and rocky slopes, searching for foxes and other prey, with Golden Eagles held high on their leather covered fists. Bodio not only finds the image he'd seen as a child, he lives it.

The relationship between the hunters and their eagles is remarkable and completely symbiotic. The birds live in the gers, like one of the family. They are captured as juveniles and never kept longer than five to ten years. The long-lived eagles then have perhaps 40 years or more to live free and breed.

Bodio obviously has deep feelings for Mongolia. "I love its paradoxes, its space and hospitality, its freedom and ancient customs. It is a place of great roadless areas, all known and inhabited since prehistory. . . . It is wild enough for great horned sheep; wolves, snow leopards, and the last undomesticated camels; with the lowest human population density on earth. . . . I can't get enough of it, and I never will."

—*Tim Gallagher*

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SONGFINDER

My companion was staring intently at a nearby spruce clump. "There's a Golden-crowned Kinglet singing," he said. "Where? I don't hear anything," I said sadly.

Although I can still hear conversation quite well, experiences like the above have slowly lead me to the unhappy realization that high-pitched sounds have become largely inaudible to me. Thanks to SongFinder, however, I have been spared the frustrating finality of my high-end hearing loss. I can again clearly hear Golden-crowned Kinglets and Brown Creepers and even warblers, insects, and frogs that had been silent to my ears for many years.

I first heard about SongFinder in the fall of 2002 in a casual conversation with Greg Budney, audio curator at the Lab's Macaulay Library. I told him that after a full summer's intense but unsuccessful experimentation with hearing aids, it had become clear to me that they were not an answer. They were just not intended to reproduce the high sounds I longed to hear. Greg told me about the pitch-lowering device that Lang Elliot used to counter his high-level hearing loss. I contacted Lang at once to learn more.

He generously invited me to visit his studio and try his personal unit. What an experience! The instant I put on the headset I was hearing sounds I had not heard for nearly 30 years. Since the relative pitches were the same, the fact that the sounds were in a lower frequency than I remembered them was not nearly as troublesome as I had expected. This was what I was looking for, and I had to have one. Lang told me that he and his partner, engineer Herb Sussman, were developing a more compact digital unit and hoped to market it to the birding public by the spring of 2003. I asked to be put on the waiting list for SongFinder and began anxiously waiting for Herb and Lang to produce a marketable unit that I could buy.

In February 2003, Herb called and said he had a prototype I could try out. I picked it up that day. Wow, was it neat. It was compact, powerful, comfortable, and amazingly effective. On my first trip afield I heard a Black-capped Chickadee's spring calls and song, sounds I only vaguely recognized from years past. I quickly realized, to my delight, that I could actually locate feeding chickadee flocks some distance away by sound alone. Even Cedar Waxwing fly-overs rarely eluded me. It was awesome!

Winter soon ended and the spring migration kicked into high gear. Every day brought new challenges and new opportunities to test my skills as a novice ear birder. I have a lot of catching up to do and I have put SongFinder through a grueling, almost daily workout for several months now. The longer I work with it the better I like it.

With SongFinder I can quickly find a singing bird, even at fairly great distances. I can drive slowly through grasslands with the car windows down and locate singing Grasshopper Sparrows. Warblers that I couldn't hear singing even from a few feet away now reveal themselves by song alone from 100 yards or more away. I used to envy beginning birders the overwhelming excitement of seeing their first Scarlet Tanager. SongFinder has made me a beginning birder again. Every day is charged with the excitement of fresh new experiences.

To learn more about SongFinder and whether it's right for you, go to <www.naturesound.com/songfinder/songfinder.html>.

—Bard Prentiss

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FIFTEEN THINGS TO DO WITH YOUR STOCKPILE OF RETIRED BINOCULARS

by Pete Dunne

Experienced birders differ in many respects. Some well-traveled types keep extensive life lists, others have lists that are more modest. Some are plumage-driven in their approach to bird identification, others are more attuned to bird shape. But all experienced birders seem to have one thing in common. They all own a pile of old binoculars, accumulated as they climbed the glass ladder en route to the alpha birding binoculars they use today.

Whether those old bins are hidden in a trunk beneath your high school letter sweater or hanging on a hook in the closet where holiday decorations are stored, chances are you have thought about finding a use for them (if for no other reason than to keep you from recalling how much money you wasted on them). So here for your consideration is a list of 15 things to do with old binoculars.

1. Drop them on concrete, then take them apart and put them back together again. You'll finally understand the wisdom of this age-old piece of advice: "Never try to repair misaligned binoculars yourself."

2. Put them in the trunk of your car in case you have a flat on a hill and need something to chuck behind the wheel to keep the car from rolling away.

3. Plop one (or two or three) binoculars into the water-holding tanks of your toilets to conserve water.

4. Use them as walking weights to increase your upper arm and shoulder strength for the upcoming hawk-watching season or spring warbler migration.

5. Wait until the leaves are about to fall, then stuff your old binoculars into the drainpipes of annoying neighbors who fire up their lawn mowers at seven o'clock on Sunday mornings.

6. Place an ad on eBay. Promote them as one-of-a-kind instruments given to you by aliens outside Roswell, New Mexico, that allow you to communicate with advanced civilizations on other worlds, see Elvis, eat all you want and lose weight, and view tomorrow's stock closings.

7. Put them on the roof of your car and drive away. Everyone does this at least once, so wouldn't you rather do it with a glass you don't want?

8. Put them under your pillow in hopes that the Optics Fairy will exchange them for one of the hot new roof prism models. Or maybe the Tooth Fairy will be making the rounds and give you a quarter for them. Either way, you come out ahead.

9. Try to convince Tom Sawyer to take them in exchange for a turn at whitewashing Aunt Polly's fence. If this fails (and chances are it will—Tom's a pretty smart boy), track down the kid with the dead rat tied to a string (used, if memory serves, to swing at girls to keep them away). Trade the binoculars for the rat, then trade up for the paintbrush and a place at the fence (or keep the rat).

10. Hide them in obscure places all around your house so that you can practice finding them in preparation for the next time you're going off on a birding trip and you can't find your alpha binoculars.

11. Bury them on beaches so that people wandering around with metal detectors will actually have something to find.

12. Mail them to someone you don't like (postage due), and put the name and address of someone you like even less in the return address space.

13. When walking through enchanted forests, drop them periodically along the way to mark your path so you can find your way home. Save the bread crumbs for chumming on pelagic birding trips.

14. And if you still have leftover binoculars when you take that pelagic trip, consider the merits of starting a reef.

15. But the best thing to do with used binoculars, of course, is to DONATE THEM TO BIRDERS' EXCHANGE—a program sponsored by the American Birding Association to get binoculars into the hands of incipient birders in developing nations. It's good for ecotourism. It's good for habitat protection. And it's good for the future of birding. For more information, contact Betty Petersen, Birders' Exchange program director, American Birding Association, P.O. Box 6599, Colorado Springs, Colorado 80904; telephone: (719) 578-9703; email: <bpetersen@aba.org>. ■

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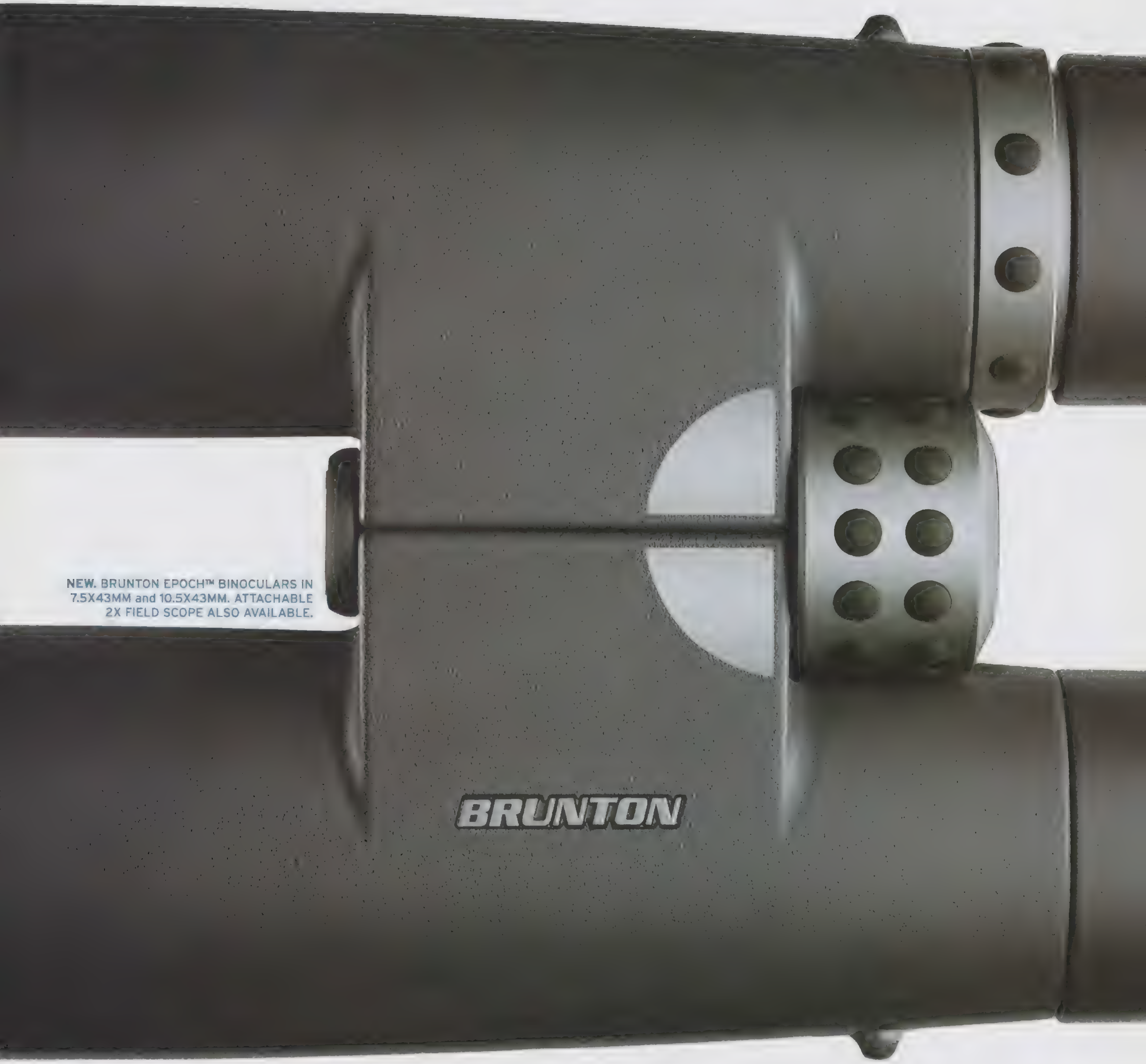

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LIVING BIRD

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GREETINGS FROM SAPSUCKER WOODS

This column is always the last thing I write before sending *Living Bird* to the printing press. That way, I figure I'll be writing it as close as possible to the actual issue date of the magazine—winter, spring, summer, or autumn—and might have something topical to say about the season.

At least that's my theory. Unfortunately, when it comes to the weather in Ithaca, New York, things rarely go according to plan. I'm writing this on the 21st of March—the day after the official first day of spring—and it is anything but springlike outside. As I walked my dog out back a few minutes ago, a powerful wind howled, blowing snow sideways across the field. Barely any birds were visible, except for a few forlorn-looking crows hunkered down in some nearby trees and a couple of hardy Blue Jays.

But I am hopeful. Although it won't happen this month and perhaps not next, come May the warmer weather will be back, and with it the lush foliage of spring and of course the migrants. To me, spring is the most interesting season—a time when each day brings new surprises as migratory birds return to their breeding grounds here or pass through on their way farther north.

Every morning, the woods will ring with the songs of warblers, thrushes, vireos, and more. And Lab staffers will be out walking the bird-rich trails of Sapsucker Woods to see what arrived in the night—trying to be the first to spot each species. For a short time, even common birds such as Yellow-rumped Warblers and Wood Thrushes become stars on the local listserv as they move into the area and fill the woods with their songs. It's a great time to be here. I can't wait.

Tim Gallagher
Editor-in-Chief

Cover: A stunning crimson Apapane sips the nectar of an ohia bloom at Hakalau Forest National Wildlife Refuge on Hawaii's Big Island. These colorful honeycreepers are found on all the main Hawaiian Islands. See page14. Photograph by Jack Jeffrey.

Right: A lava flow from Hawaii's Kilaeua Volcano engulfed part of Chain of Craters Road, reaching as high as these road signs when it swept to the sea. Photograph by Tim Gallagher.

Back cover: A young Hawaiian Hawk sits in its nest at Hakalau Forest National Wildlife Refuge, peering up at its parents soaring high above. Photograph by Jack Jeffrey.

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SPRING 2004 VOLUME 23 NUMBER 2

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Letters

RICHARD POUGH

Thanks for your great article on Richard Pough ("Remembering Richard Pough," BirdNews, Winter 2004). I never had the privilege of meeting him in person, but I did in effect meet him through his field guide. Over 50 years ago, my first field guide was his. It put me on the trail to birding. I was later able to teach ornithology myself, and I still give volunteer presentations in schools and also lead children on field trips.

Bob Holtz
Roseville, Minnesota

THE DEBATE CONTINUES

I'd like to address one facet of the "digital debate" over film versus digital photography (Letters, Winter 2004). I am an amateur bird photographer and am close to making the switch to digital. The opinions expressed in your last Letters section are all valid, but these readers overlooked one important topic. In his article "Crossing the Digital Divide" (Summer 2003), Arthur Morris pointed out the benefits of eliminating the need for film processing, which is heavily dependent on harmful chemicals. It seems to me that the minor (and it does seem minor) decrease in overall image quality when compared to film should be outweighed by the positive environmental impact of reducing dumping of the nonreusable chemicals used to develop film. We as birders and conservationists should embrace such ideas. I always feel guilty finishing a roll of film, knowing what will happen just to make those images.

One reader referred to Morris as being "seduced by the joys of digital photography" and that it is like fast food. I don't agree. Yes, he is a rare breed of photographer whose images usually show his genius, but by embracing the convenience of digital photography, he is not copping out, as was implied. Digital is a development in the ongoing evolution of photography. While slide film currently is the standard, digital is only a tiny, tiny step behind. We should ask ourselves if the supposedly better images are worth the price of polluting the land and water with photographic chemicals. After all, we want the birds to be around to be photographed.

Zach Smith
San Diego, California

FORESTRY 101

I was enjoying the Winter 2004 issue of *Living Bird* but was a bit surprised to read the cover photograph described as "A Dark-eyed Junco sits on a pine bough in the snow." This is a beautiful photograph of a common winter bird in our garden, but I think the bough is eastern hemlock, rather than pine. The photograph is actually more interesting, given that juncos may have a more difficult time finding hemlocks in which to perch in the not too distant future.

As I type there are indeed juncos in the hemlocks in our yard—but these beautiful trees (one of them is between two and three feet in diameter and one of the tallest in the woods) are all infested with the wooly agelid, and I do not know how much longer they will grace our yard with their shade and beauty.

David Norton
Amherst, Massachusetts

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send email to <livingbird@cornell.edu>.

Asian Vulture Update

MUNIR VIRANI THE PEREGRINE FUND

A Long-billed Vulture flies along a cliff in India. This and two other Asian vulture species have suffered catastrophic declines during the past decade.

Three years ago we reported on a mysterious ailment that was causing massive vulture die-offs in the Asian subcontinent ("Asian Vulture Crisis," BirdNews, Winter 2001). At that time, the populations of two vulture species had already dropped by 90 percent in India alone, and researchers had no idea what was causing it. Large numbers of stricken vultures were seen with their heads and necks drooping down. They would later drop from their perches and die, apparently of kidney failure.

Since then, the situation has only gotten worse. According to Peregrine Fund researchers, the Oriental White-backed Vulture, Long-billed Vulture, and Slender-billed Vulture have declined in numbers by 92 to 99 percent.

Less than a decade ago, these vultures numbered in the tens of thousands across India, Pakistan, and Nepal. The crash in their populations is a human as well as an environmental disaster. These vultures were a free waste disposal system, quickly devouring dead cattle and other animals in the countryside as well as in cities. (A flock of vultures can reduce a full-grown cow to a pile of bones in an hour.) The birds also played a vital role for the Parsi, devouring human corpses in this religion's centuries-old tradition of sky burials.

Last year, Lindsay Oaks, a veterinarian working with The Peregrine Fund, finally discovered the cause of the declines—an anti-inflammatory medication called diclofenac that is routinely administered to cattle in this region. Birds that ate cattle treated with the drug have been dying in massive numbers, and Oaks warns that if nothing is done, all of these species could be extinct within months.

According to Bill Burnham, president of The Peregrine Fund, the annual mortality rate of these species is now a staggering 30 to 60 percent. "Based on this rate of decline, this breeding season could be their last," he says.

The news caught the attention of the international community and has prompted calls for a regional solution, because the birds travel back and forth across national borders. But there's a hitch: two of the countries involved—India and Pakistan—have a long history of conflict, and there's little evidence that they're going to start working together anytime soon.

"Although extinction in the wild might happen, it is possible to save the three species and get them back into the wild as self-sustaining populations by 2030," says Jemima Parry-Jones, director of the National Birds of Prey Centre in Newant, England. She adds that this will take a "huge amount of work and commitment" from all of the countries concerned.

The Peregrine Fund organized a summit on the Asian vulture crisis this past February in Kathmandu, Nepal. Officials from India, Nepal, and Pakistan, and representatives from non-governmental environmental organizations emerged with a resolution calling for two things: controlling the use of diclofenac in South Asia and setting up a captive-breeding program to save the endangered vultures.

Delegates from Pakistan and Nepal agreed to initiate a process to control diclofenac, and the Indian government offered to educate groups about the environmental consequences of the drug. Diclofenac is manufactured in Pakistan and India and, at less than 50 cents a dose, it's an inexpensive way for farmers to treat their cattle for pain and inflammation. The farmers are loath to give it up.

"An Indian official told me that it would be easier for India to ban diclofenac if Pakistan or Nepal banned the drug first," says Rick Watson, director of international programs for The Peregrine Fund. That's because the Indians are not yet entirely convinced that diclofenac is the main culprit in their country, adds Watson.

A move by other countries would give politicians something to point to. "The Indians are invested heavily in the idea that the vulture demise was caused by an infectious disease and, although they believe our findings, it will take a while for them to get over their theory," Watson says.

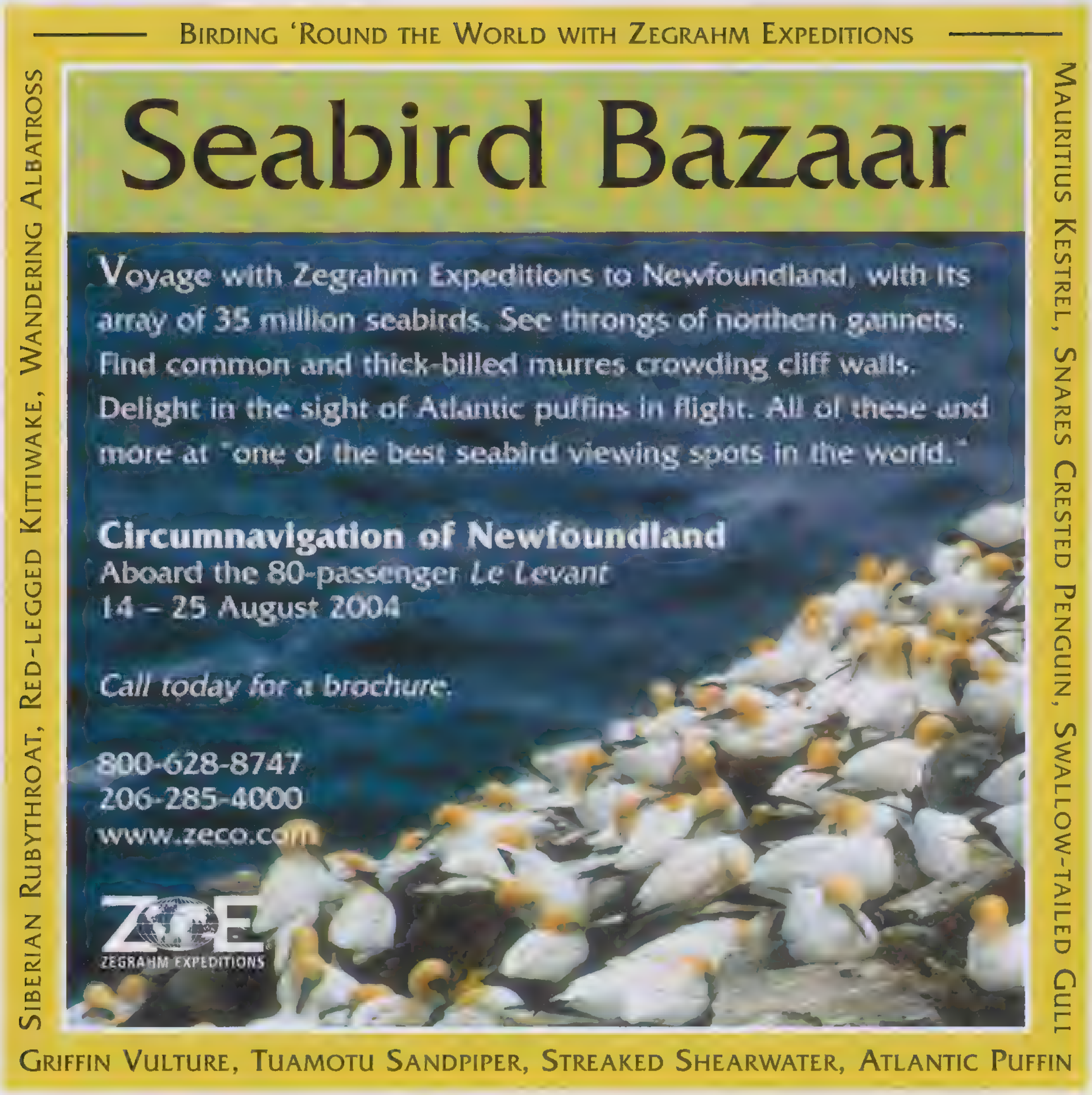
Currently both India and Pakistan want to save the Asian vultures, but so far there are no signs that they intend to work cooperatively, as each country moves forward with different approaches. "But I did not get the sense that if the occasion arose there would be any reservations by the conservationists to work together," says Oaks.

Both India and Pakistan proposed establishing captive-breeding programs. One facility is already in place in India and another two are planned. As a result of the Kathmandu summit, an environmental and wildlife agency in Abu Dhabi, United Arab Emirates, has offered to breed Asian vultures in captivity. Pakistan and Nepal will ship vultures to Abu Dhabi, but the birds and their offspring will be returned once the situation is stable. Peregrine Fund researchers plan to capture young vultures and have them ready to transport to the United Arab Emirates by the end of April. The offspring these birds produce would eventually be used to boost the wild populations of the three species or, if necessary, to reintroduce them to areas where they've been extirpated.

"Our minimum goal is to establish 25 pairs of all three species, but that might not be possible," says Burnham. The Peregrine Fund is particularly concerned about the Slender-billed Vulture, which some researchers believe may already be extinct. This species previously ranged along the Ganges River in northern India and southern Nepal, but in a recent survey, researchers only found seven of these birds and did not locate any nests.

"We have done as much as we possibly can," Watson says. "We found the problem, identified it, and talked to governments. Now we're going to put some of these birds in a captive-breeding program."

—*Rachel J. Dickinson*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FIRE IN THE MOUNTAINS

by David S. Wilcove

In search of the spectacular Fire-maned Bowerbird of New Guinea

To discover a new species of bird in New Guinea in the 1920s was not entirely unexpected. To find one as dazzling as the Fire-maned Bowerbird was. In 1928, legendary bird collector Rollo Beck returned from the island with three specimens of a stunning new bowerbird. Satin black with a patch of gold in its wings and a fiery red "cape" of elongated feathers extending across its back, *Sericulus bakeri* was a sight to behold. Beck's labels on the specimens indicated only that they had been taken in the vicinity of Madang on the north-central coast of Papua New Guinea. Ornithologists were agog over the spectacular bird and repeatedly asked Beck for more details about his discovery. Beck said he could provide nothing more than what was written on the labels. Extensive searches by other ornithologists failed to turn up any sign of the glorious bird. By the time of Beck's death in 1950, the Fire-maned Bowerbird had become the Holy Grail of New Guinea ornithology.

In 1956, E. Thomas Gilliard of the American Museum of Natural History launched an expedition to find Beck's mysterious bowerbird. He focused his search on four areas: the Bogadjim area, where the town of Madang had been located until "tropical fevers" forced the government to relocate it across the bay to its present location; the foothills of the Finisterre Mountains; the foothills south of present-day Madang; and the foothills of the Adelbert Mountains west of Madang. Gilliard carried a life-sized painting of the bowerbird and showed it to the villagers he met along the way. None recognized the strange bird, not even an elderly gentleman who had been one of Beck's field assistants during the 1920s.

Upon his return to New York City, Gilliard learned that Beck's widow had accompanied her husband on his expedition to New Guinea and was living in California. Gilliard wrote to her, describing his futile search for the Fire-maned Bowerbird and inquiring whether she might know something more about her husband's discovery. Indeed she did. Mrs. Beck replied that the bowerbirds had been collected in the Adelbert Mountains, well to the west of where Gilliard had been searching and not all that close to the location given on the specimen labels. Armed with this new information, Gilliard returned to New Guinea in 1959 and obtained 11 specimens of *Sericulus bakeri.* The mystery of Beck's bowerbird had been solved: The birds lived in an area of only 500 square miles in the hill forests of the Adelbert Mountains. (Gilliard later speculated that Beck had intentionally kept the specimen labels vague to avoid attracting other collectors to the Adelbert Mountains, perhaps because Beck might have been planning to return there to complete his survey of the fauna.)

ILLUSTRATION BY JOHN SCHMITT

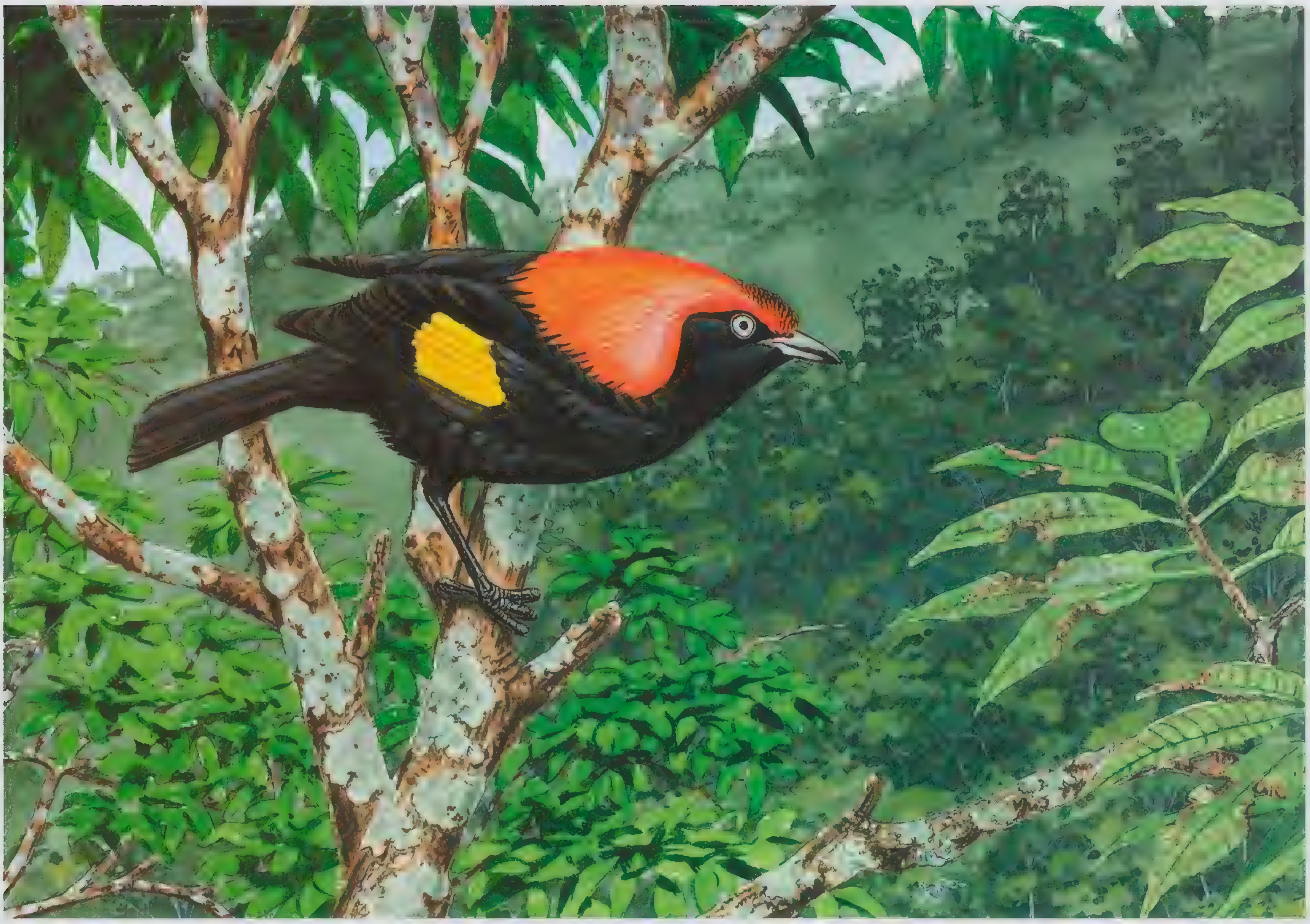
Among bowerbird aficionados finding the bird is only half the challenge; the other half is finding the bower, the remarkable archway, avenue, and display area that a male bowerbird creates out of twigs, grass, and other plant materials to attract and woo females. Gilliard spent weeks searching for the bower of the Fire-maned Bowerbird. He tromped through the forest, he enlisted the help of the villagers he encountered, he even offered large rewards for its discovery—all to no avail. In his magnum opus, entitled *Birds of Paradise and Bowerbirds,* a discouraged Gilliard described the bower of *Sericulus bakeri* thusly: "Apparently none."

That answer did not sit well with subsequent generations of ornithologists, who continued to search for the bower. Twenty-seven years would pass before Roy Mackay and Brian Coates solved the mystery. In September 1986, they flew over the southwestern Adelberts in a helicopter and randomly picked a location—Ilebaguma village—from which to launch their expedition. It proved to be a propitious choice. In conversations with the villagers, the ornithologists were startled to learn that a local woman had found a bower just a week earlier. The next day she took the two men to the site, and they became the first scientists to see the *bakeri* bachelor pad: a small archway of twigs and sticks, decorated with blue fruit and berries.

If the Fire-maned Bowerbird was gradually revealing some of its secrets, it certainly wasn't revealing them to very many people. The places where it was known to occur were inaccessible to all but the most intrepid explorers.

In 1998, Bruce Beehler, a scientist for Conservation International and co-author of *Birds of New Guinea,* was attending a conference in the city of Madang. Another conference participant mentioned that a new ecolodge had opened in the Adelbert Mountains, and the two men decided to go there after the meeting. Beehler knew the lodge was within the range of the Fire-maned Bowerbird. Would they be lucky enough to find the bird?

Upon arriving at Keki Lodge, Beehler produced a copy of his own *Birds of*



"Satin black with a patch of gold in its wings and a fiery red 'cape' of elongated feathers extending across its back, the Fire-maned Bowerbird is a sight to behold."

New Guinea. Opening it to the plate with the Fire-maned Bowerbird, he queried lodge owner Moyan Okira and others living in the vicinity. Did anyone recognize this bird? Much to Beehler's disappointment, the answer was no. The next morning, however, he spotted a calling female bowerbird as it flew overhead. By its body shape and vocalizations, he knew it was a *Sericulus* bowerbird, and the only member of that genus likely to be living in this part of the Adelberts was the fire-maned. Shortly thereafter, Beehler located an adult male quietly feeding in a fig tree. It was, he recalls, "radiating beauty." Okira's modest lodge had a celebrity bird living on its premises.

Four years later, I visited the Keki Lodge with Beehler and a small group of friends. The lodge was not elaborate. A few huts raised on stilts provided sleeping quarters for the guests. Visitors brought their own food, which Okira and staff prepared and served in an open-air dining area. Sinks and showers were nonexistent, but a little stream downslope from the sleeping quarters did the trick. Yet in bird watching as in real estate, location is everything.

My first encounter with the Fire-maned Bowerbird mirrored Beehler's. A loud snarling sound drew my attention to a female feeding in a fig tree. Later that afternoon, an adult male joined her. It was one of the most spectacular creatures I have ever seen. Its fiery mane glowed with an intensity I could not have imagined; its cool white eyes stood out against the glossy black feathers of its head. Like Beehler, Mackay, Coates, Gilliard, Beck, and countless generations of Papuans before me, I was transfixed by the beauty of this bird.

And therein lies the wonder of natural history. Each of us, in our own way, had discovered the Fire-maned Bowerbird. My own sighting was far less significant from a scientific perspective than those of Beck or Gilliard or Mackay and Coates. Yet the Fire-maned Bowerbirds I saw that day were as beautiful as any they ever saw, perhaps even more so, because "my" birds embodied all of the trials and tribulations, the successful searches and failed expeditions, that these men and many others had endured over the course of seven decades. I could easily imagine the joy all of these ornithologists must have felt when they first spotted this remarkable bird in this remote corner of the world. In fact, I didn't have to imagine it; I was living it. ■

Further Reading

Coates, Brian J. 1990. The birds of Papua New Guinea including the Bismarck Archipelago and Bougainville. Vol. II. Dove Publications, Alderley, Australia.

Gillliard, E. Thomas. 1969. Birds of Paradise and Bowerbirds. Weidenfeld and Nicolson, London.

ROBERT McCRACKEN PECK

Alexander Skutch is a busy man, working on several writing projects. He still uses the same typewriter on which he wrote most of his classic books.

Alexander Skutch at 100

The famed writer, philosopher, and ornithologist reaches the century mark this May

BY ROBERT McCRACKEN PECK

In his insightful book, *The Thunder Tree,* nature writer Robert Michael Pyle claims that everyone with a passion for nature obtains that passion through "a ditch somewhere—or a creek, meadow, woodlot, or marsh . . . places of initiation where the borders between ourselves and other creatures break down, where the earth gets under our nails and a sense of place gets under our skin." Although there is no substitute for the intimate experience of a wild place, a well-written book can have almost as profound an effect. Henry David Thoreau, Henry Beston, Aldo Leopold, and Annie Dillard are among the writer-naturalists who have helped countless people to know their respective "places of initiation" as profoundly as it is possible to do without providing a personal visit.

Though less well known than his North American counterparts, Alexander Skutch is another such writer. His semi-autobiographical books, *A Naturalist in Costa Rica* and *A Naturalist on a Tropical Farm* in particular, make natural history so accessible and the life of the tropics so exciting that they should sit with *Walden, The Outermost House, A Sand County Almanac,* and *A Pilgrim at Tinker Creek* on every would-be naturalist's bookshelf or bedside table. Despite the evocative power of his personal narratives, Skutch is better known in scientific than in literary circles, because he is one of the world's most meticulous and insightful students of birds.

The late Roger Tory Peterson claimed that with his intimately detailed and sensitive accounts of the life histories of Central American birds, Skutch has done for the birds of the Neotropics what John James Audubon did for the birds of North America. Robert Ridgely, author of *A Guide to the Birds of Panama* and co-author (with Guy Tudor) of *The Birds of South America,* agrees. "Dr. Skutch has studied and written in detail about the private lives of more Neotropical birds than anyone in history," says Ridgely. "His contribution to our knowledge of birds is truly remarkable." In a review of Skutch's classic book *Helpers at Birds' Nests: A Worldwide Survey of Cooperative Breeding and Related Behavior,* Walt Koenig of the University of California described Skutch as "possibly the greatest avian natural historian alive today."

Still as brilliant, modest, courtly, and charming as he was when that review was written (or when he began his career some 75 years ago), Alexander Skutch today spends more time reminiscing over past ornithological adventures than creating new ones. Fortunately, he has a great deal to reflect on. Central America's most revered ornithologist turns 100 in May.

Born and raised near Baltimore, Maryland, Skutch developed a fondness for the tropics firsthand, while studying botany at Johns Hopkins University. (He received his Ph.D. there in 1928.) He financed his graduate studies and early travels in Central America by collecting and selling plant specimens to museums and botanical gardens around the world. After several years of intensive field work in

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Honduras, Guatemala, Panama, and Costa Rica, his interests began to shift from plants to birds. In 1932 he spent a year in the Costa Rican highlands observing and recording the previously unstudied life of the Resplendent Quetzal. It was the first of many such studies that would eventually lead Skutch to write some 30 books on the birds of Central America, earning him the thanks and admiration of countless bird watchers and a permanent place in ornithological history.

Although academic calendars and short funding cycles often dictate the time available for field studies, Alexander Skutch set his own schedule, observing the birds around him with a curiosity, patience, and devotion to detail rare for any age but nearly impossible in today's world. Since 1941 he has carried out most of his studies on a 72-hectare (178-acre) plot of land in southern Costa Rica, not far from the Pacific Coast. He named the property "Los Cusingos" for a small, colorful toucan called the Fiery-billed Aracari he found living there. It became not just the center of his professional life, but his home as well. Today he is still living on the farm about which he has written with insight and affection for more than half a century.

Skutch watches birds from the porch of his Costa Rica home, which he built himself in the 1940s.

ROBERT McCRACKEN PECK

Getting to Los Cusingos, a four-hour drive south of Costa Rica's capital, San Jose, over the so-called "Mountains of Death" (now renamed "Buena Vista" by the country's Department of Tourism) is much easier now than it was when Skutch first traveled there on horseback almost 60 years ago, but finding the farm is still something of a challenge. That is just fine with Alexander Skutch, who prefers the company of wild things to the hubbub of the outside world. He has not owned an automobile since his college days, and until the turn of the millennium, lived without benefit of electricity or telephone in the farmhouse he built with a few planks of local wood and one bag of cement (he added a second, equally simple section to the house about 25 years ago). Until the 1970s, when a gravity-fed water line was brought to his house, Alexander and his late wife Pamela (whom he married in 1950, and who passed away in 2001) relied on a nearby stream for drinking, washing, and bathing.

The Skutches grew corn, bananas, yucca, and other crops, kept chickens, cows, and horses, and prided themselves on being almost entirely self-sufficient. A lifelong vegetarian, Skutch still feels strongly about man's responsibility to tread lightly on the earth. His pacifism extends to the natural world, where he has grown increasingly disturbed by what he considers the unnecessary barbarity of predation, especially when it affects the beloved (and carefully studied) birds on his farm.

For years he has actively removed predatory snakes from Los Cusingos. In his most recent book, *Harmony and Conflict in the Living World,* he went a step further and offered his own controversial ideas about which wild species should or should not receive assistance from humankind: "As an approach to conservation less daunting than biodiversity of indefinite compass, I suggest that we devote our efforts to biocompatibility, or compatible biodiversity, the harmonious association of diverse species," he wrote. "We should choose a large community of diverse creatures that coexist without destructive strife, or better, with mutual support, and then add whatever other organisms might be compatible with this nuclear group."

As we sat together on his open wooden porch at Los Cusingos some years ago, a steady line of spectacularly beautiful birds darted from the forest to his feeder as thunderheads built in the eastern sky: Cherrie's Tanagers, Speckled Tanagers, Green Honeycreepers, Bay-headed Tanagers, Red-legged Honeycreepers. Skutch identified each, sharing a bit of interesting information about its behavior as we watched it feed. He has recorded more than 30 different species at his feeder and studied more than 10 times that number elsewhere on his farm during the last 50 years.

On the ground below the fruit-sharing birds, two dark brown agoutis, shy long-legged rodents the size of large housecats, searched the grass for food, while monarch butterflies sipped nectar at the flowers beside the house. It was a scene of Edenic harmony that made Skutch's dream of biocompatibility seem almost attainable.

With several writing projects in the works, Alexander Skutch is still a busy man, but time is beginning to take its toll. His hearing and eyesight are impaired, and the crippling effects of osteoporosis have made it difficult for him to scan the treetops for birds or walk the trails on his farm.

Fortunately, his years of patient observation and his gift for writing have preserved the magic of the farm and its wildlife as he first knew it. Through Skutch's pen and now rusting but still active Smith Corona manual typewriter, Los Cusingos has joined the small, powerfully important group of sacred places the world will visit and know (at least vicariously) forever. He may not be able to prevent the cruelty of one wild species preying upon another, but this quiet, gentle man, who now rarely leaves the confines of his porch or nearby writing cabin, has left a legacy that is sure to inspire a better understanding and stewardship of the natural world for generations to come. ■

Robert McCracken Peck is academy librarian, senior fellow, curator of art and artifacts, and editor of scientific publications at the Academy of Natural Sciences in Philadelphia.

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BIRDING HAWAII'S BIG ISLAND

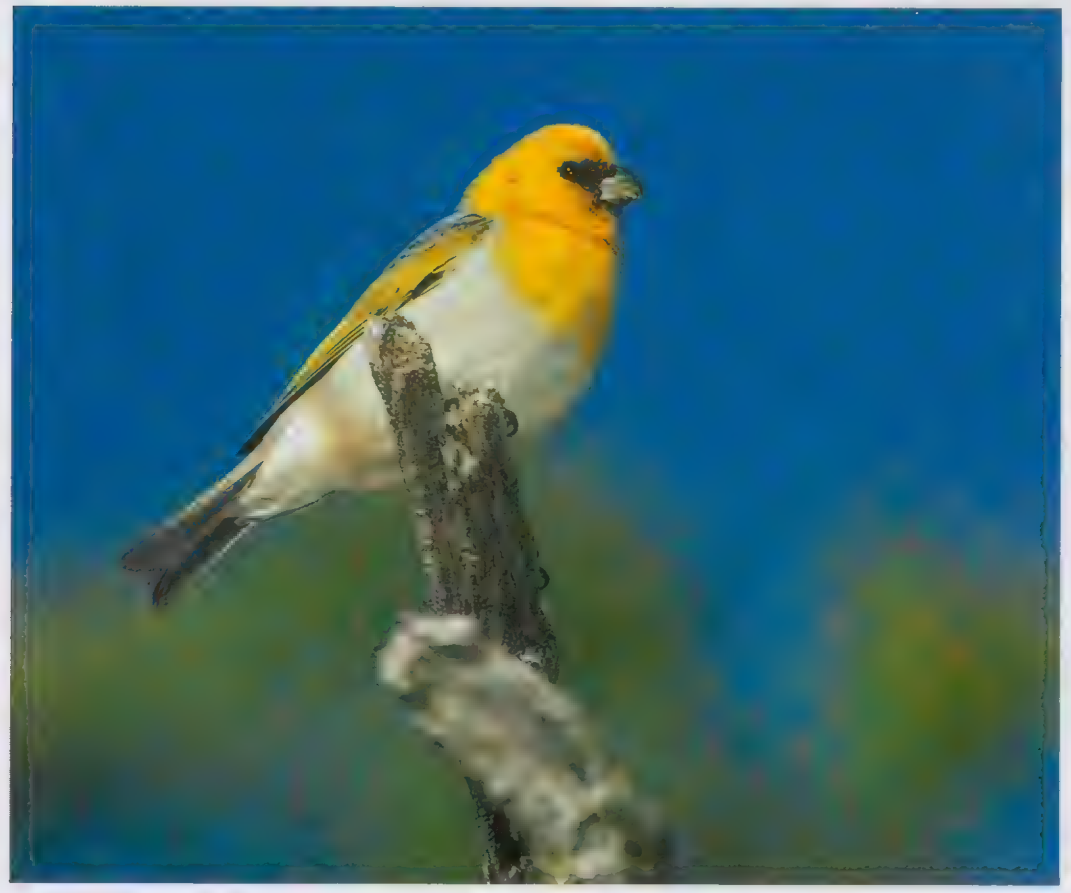
Following in the footsteps of Captain Cook and Mark Twain

TEXT BY TIM GALLAGHER
PHOTOGRAPHS BY JACK JEFFREY

As the plane began its descent toward Kona International Airport, I got my first glimpse of the Island of Hawaii looming ahead, adrift in a perfect blue sea. My initial impression of the island's west coast was that it looked like Iceland—the same barren, treeless vista with endless stretches of dark, jagged rock from ancient lava flows. But the image was shattered the instant I stepped through the door of the plane and was hit by scorching sunshine and a thick, humid wall of hot tropical air. Iceland it is not.

Nicknamed the Big Island by locals to distinguish the Island of Hawaii from the state, it is truly large compared with the other islands in the archipelago. Approximately the size of the state of Delaware, the Big Island is more than twice as large as the rest of the islands combined.

This was the first time I'd ever set foot in Hawaii, or for that matter anywhere in Polynesia, and I was eager to sample the local birdlife. My first sighting was anticlimactic. As I walked across the tarmac to the open-air terminal—which really looked more like a Hawaiian village than an airport—I spotted some House Sparrows. This turned out to be the norm in the lower areas of the island along the coast, where most of the birds are exotic species



This mamane forest on the dry leeward side of Mauna Kea offers perfect habitat for the endangered Palila (left), a large Hawaiian finch found only on the Big Island.

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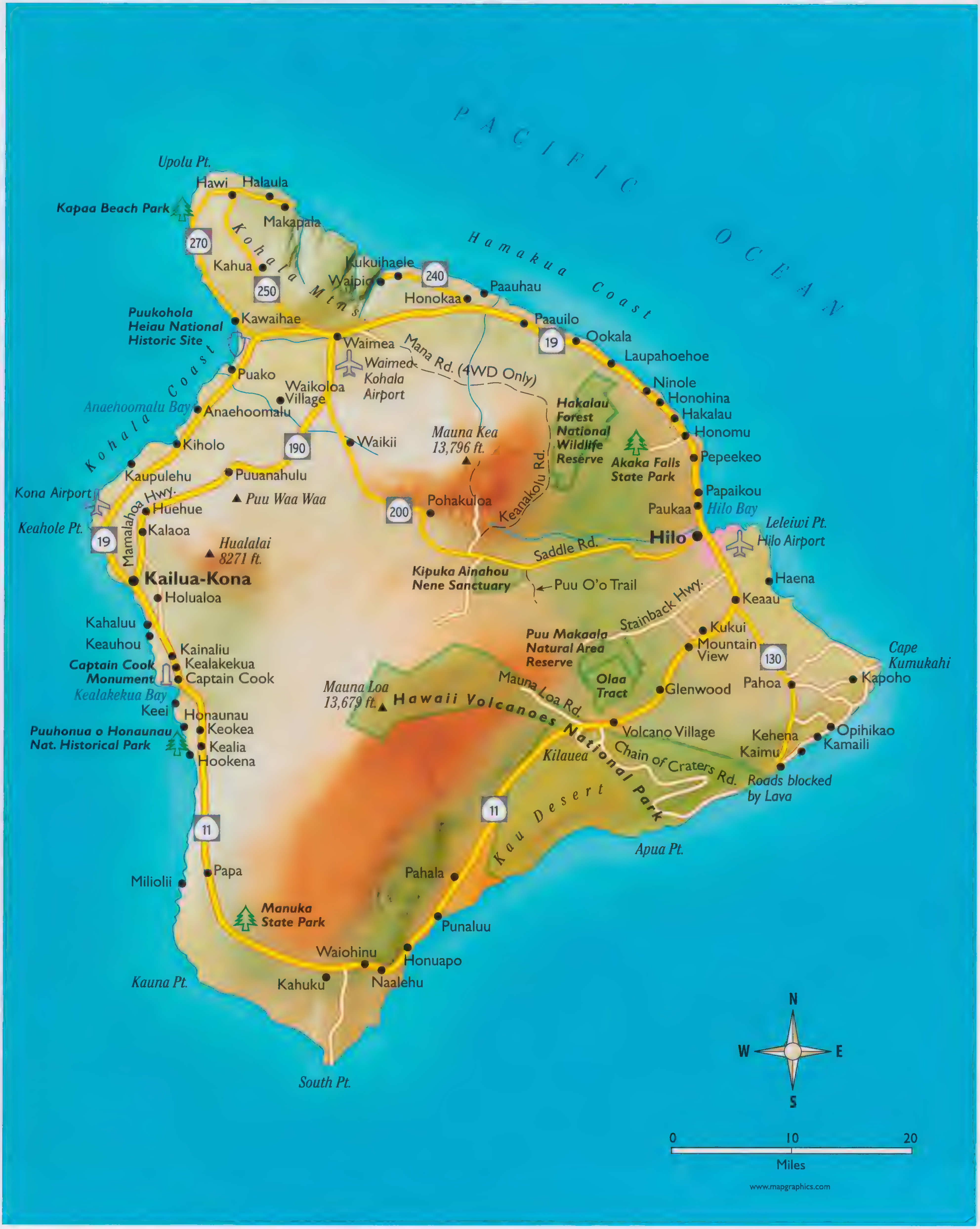


MAP GRAPHICS

that came to the Hawaiian Islands decades ago—some deliberately introduced, such as the many gamebirds, and some arriving accidentally on visiting ships. These birds brought deadly diseases such as avian pox and malaria to which the native species had no immunity. What's more, ships brought mosquitoes, which rapidly spread diseases through the island's birdlife. (See "In Search of Hawaii's Vanishing Birdlife," Summer 2003.) Native Hawaiian birds are now rarely found below 4,500 feet above sea level. The temperature is cooler at the higher altitudes, so the malaria protozoan can't complete its life cycle there.

I stayed in several resort hotels along the west coast of the island. These resorts rise up like manmade oases along the largely barren coast, and they are magnets for birds. I awoke each morning to a deafening cacophony of bird songs and calls. And even though they were not native birds, I enjoyed seeing species that were new to me, such as Saffron Finches, Yellow-billed Cardinals, African Silverbills, Gray Francolins, and many others. But I still couldn't wait to venture into the high country on the slopes of the great volcanoes Mauna Loa and Mauna Kea—at 13,796 feet, the tallest peak in the entire island group.

On my second day on the Big Island, I got together with my friend Jack Jeffrey, one of Hawaii's top bird photographers. We had arranged to meet on a deserted road at the base of an old cinder cone not far from Mauna Kea. Jack was going to show me the spectacular birdlife at Hakalau Forest National Wildlife Refuge, where he works as a wildlife biologist. This 33,000-acre refuge, high on the slopes of Mauna Kea, was established solely for the management and conservation of endangered native forest birds, and it preserves some of the best montane koa and ohia forest on the island. Most of it is closed to the public. The best birding area, the Pua Akala Tract, is reserved for ecological research and, with the exception of the one day a year when the refuge hosts an open house, visitors need to obtain special permits to go there. But several tour companies (including Hawaii Forest & Trail, a popular local tour company) lead a limited number of groups there each year.

Half an hour after I reached the rendezvous point, we were lurching and bouncing our way up a rugged dirt path, probably more suitable for a mountain goat than our four-wheel-drive vehicle. En route, we saw Chukars, Wild Turkeys, Pacific Golden-Plovers, and Skylarks. We finally arrived at the Pua Akala Tract, and it was amazing—lush tropical growth, native koa and ohia trees, with stunning Hawaiian birds singing everywhere. The branches seemed to drip with bright crimson Iiwi and Apapane, sip-

The Pua Akala Tract (above) is a lush tropical rainforest with ferns and ohia trees and a startling array of colorful indigenous birds, such as Iiwi, Apapane, Akepa, and Hawaii Creeper.

This kipuka—an island of native forest surrounded by lava—is one of several accessible from the Saddle Road. This adult male Akepa (above right) is one of the native forest birds that can often be found in a kipuka.

ping the nectar of the vivid brushlike red flowers of the ohia lehua trees. And Elepaio—those jaunty little insectivores with a cinnamon-streaked upper breast—were everywhere.

We quickly took out our long telephoto lenses and heavy tripods and set up our equipment near some likely looking flowers where we hoped birds would soon be feeding. We'd barely taken any pictures, though, before the low-lying clouds began to move in. What began as a light mist quickly turned into a penetrating, thoroughly saturating onslaught of heavy moisture. But Jack was ready. He pulled a couple of large plastic trash bags from his pack and tossed me one to cover my gear. We also donned waterproof outer clothing and tried to wait out the mist. Unfortunately, my hiking boots proved far less waterproof than the manufacturer had advertised, and my feet were soon sodden.

After about an hour of this, Jack suggested traveling to Puu Laau, a subalpine dry forest on the drier leeward side of Mauna Kea. This is the best place to see the endangered Palila—a large Hawaiian finch with a distinctive yellow hood and gray back, found only on the Big Island. We drove all the way back down the rugged dirt path, now slick and slippery with mud, and turned right onto the Saddle Road. Although it's a little rough in places, this handy paved road cuts across the interior of the island between Hilo and Waimea, across the "saddle" between the high peaks of Mauna Kea and Mauna Loa. After driving west for several miles, we turned right on a dirt road that led past a kiosk and a sign reading "Kilohana Hunter Checking Station." We followed the gravel road about four miles and drove through an unlocked gate marking the boundary of the Mauna Kea Forest Reserve. On the way, we saw exotic Erckel's Francolins and flocks of California Quail burst out of cover and run along the road in front of us.

Just inside the gate, we passed an old cabin beside some cypress and eucalyptus trees, but we decided to climb higher before getting out to bird. This proved to be a mistake. The road, which had been fine up to that point, got worse and worse the higher we went. Jack took me to some places that are supposed to be a sure bet for Palilas, but everywhere we looked, we failed to find them.

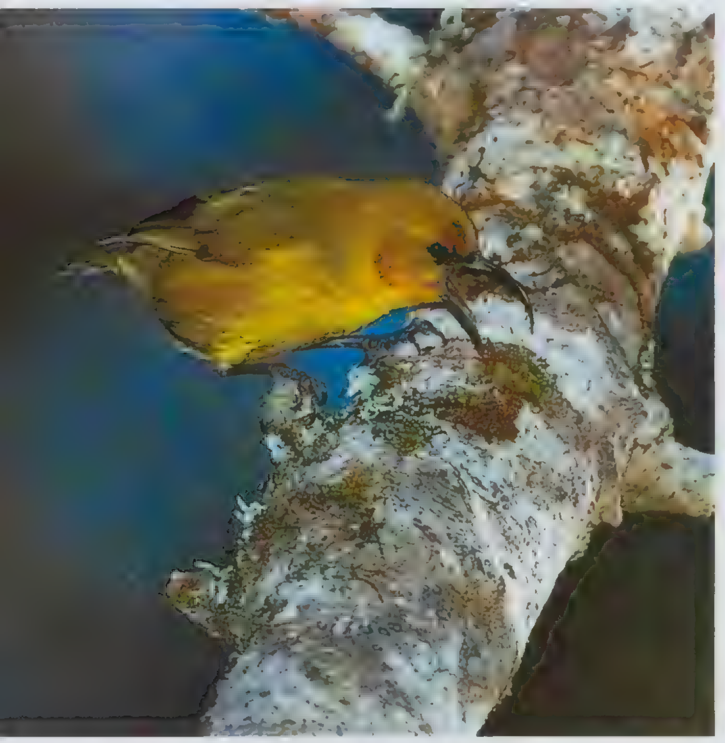
It was amazing how parched and dusty this area was compared with the rainforests of Hakalau Refuge, which is really not all that far away. But Hakalau is on the windward side of Mauna Kea, whereas Puu Laau is on the leeward side, behind the great volcano's rain shadow. As we hiked, my soaking wet boots quickly turned from light gray and tan to a uniform dark sludge brown.

We finally returned to the area near the cabin and before walking far, of course, heard the distinctive *chee-klee-o* call of the Palila ring out. Several of these birds foraged in the trees around us, ripping into green mamane seedpods with their powerful bills, sometimes hanging sideways or upside down to get at them. We stalked the birds with our cameras for a couple of hours as the light faded and a fog rolled in. We also saw many Amakihi and the pale Mauna Kea race of Elepaio.

I returned to the Saddle Road the next morning and met Jack again. This time we explored some of the kipukas not far from the road. Kipukas are fascinating pieces of pristine old forest surrounded by lava flows. Somehow when the lava swept through, these areas were spared. And because they are cut off like islands, they are relatively free of exotic plants and herbivores. We first visited "Kipuka 21," so nicknamed because it is just off the Saddle Road at mile marker 21. It is one of the most accessible kipukas, right beside the road, and the birding is excellent.

We then continued on to the trailhead of the Puu O'o Trail, about a mile farther west on the Saddle Road, and it was even better. The trail goes through the lava fields and drops into several kipukas, with dense forest as well as some open meadows. We saw Hawaiian Hawks flying over one open area and another perched in a tall koa tree. And in the dense forest we saw many native songbirds—Iiwi, Apapane, Amakihi, Elepaio, Omao.

Jack and I set up our camera equipment on top of the lava field overlooking a kipuka, almost at eye-level with some beautiful red blossoms, which we hoped some Iiwis or other native birds would soon be feeding on. Shortly



earlier, Jack had told me how seldom he saw any other people along the trail. But we hadn't been there more than 15 minutes before hikers started streaming past, first singly or in pairs, and finally in groups of five or six or more, each stopping to ask what we were doing. Of course, the birds stayed away. It turned out that a hiking club from Kona had been bused in for their monthly hike—just my luck that of all the great hiking trails on the island they happened to choose this one during my visit.

Still, it was a pleasant day, and we saw many great birds and photographed several. My greatest disappointment that day was that we didn't find any Akiapolaau, which I particularly wanted to see. This species has one of the most unusual bills you could ever imagine. The bird uses its stout, straight lower mandible to chisel into bark like a woodpecker to expose insect larvae. It then extracts the larvae with its long, thin, sickle-shaped upper mandible. Fortunately, I returned to the Puu O'o Trail a couple of days later with Rob Pacheco of Hawaii Forest & Trail, who was absolutely determined to find me an "aki." We spent several hours hiking through the kipukas and finally found the bird, pounding madly away on a branch with its lower mandible. Although the light was too poor for photography, I had an excellent view of a couple of the birds as they foraged above us.

It was fun rereading the Hawaiian dispatches from Mark Twain's *Roughing It* as I explored the Big Island. He had traveled through these parts shortly after the Civil War, when he was in his early twenties. He had been sent there by the *Sacramento Union* to write a series of articles about life in the islands. I revisited many of the same places he had seen more than a century earlier. I often felt like I was following in Twain's footsteps, although it only took me hours to drive my car to places that had taken him days or even weeks to reach on horseback. Still, given a choice, I'd much rather have seen Hawaii on horseback in 1866 than in a car in 2003.

The Puu O'o Trail (below) goes across lava fields and kipukas, with dense forest as well as open meadow. It is usually a good place to find an Akiapolaau—the bird with the distinctive, multipurpose bill.

CAPTAIN COOK'S LAST STAND

Visiting the Big Island, I couldn't pass up the chance to see Kealakekua Bay, where famed explorer Captain James Cook lost his life in 1779. (Mark Twain made the same trek in 1866, less than 90 years after Cook and his men had stood on these shores.) The bay would have been difficult to reach by land in the amount of time I had, so I opted to book a half-day snorkel and dive trip through Fair Wind, a local tour company specializing in catamaran cruises along the coast. The tour operators assured me that they would anchor within a couple of hundred yards of the Cook Monument, a stone column erected on a coral reef onshore. This tiny plot is the only place in the United States that is officially British territory and is visited at least once a year by a Royal Navy vessel.

As we sailed into Kealakekua Bay, porpoises swam beneath us, racing with the bow of the boat. White-tailed Tropicbirds soared along the high cliffs along the edge of the bay. The minute the crew anchored and let down the steps to the water, I plunged in and started swimming to the monument. Vast schools of multicolored fish moved past below, some brushing against me as I swam through them. I finally hauled myself onto the small dock and walked up to the monument.

Very near this spot, on February 14, 1779, Captain Cook, four marines, and several islanders were killed in a dispute over one of the ship's boats that had been taken during the night. Cook's men were devastated by the loss of their leader. "A general silence ensued throughout the ship for the space of near half an hour, it appearing to us some what like a dream that we cou'd not reconcile our selves to for some time," wrote George Gilbert, a seaman on Cook's ship. "Grief was visible in evry Countenance; Some expressing it by tears; and others by a kind of Gloomy dejection. . . . For us all our hopes centered in him; our loss became irrepairable and the Sense of it was so deeply impressed upon our minds as not to be forgot." Surgeon's mate David Samwell wrote that the men "cryed out with Tears in their Eyes that they had lost their Father!"

Although it has become fashionable to snicker at the European explorers of past centuries who "discovered" all these great places where other people had already been living for centuries, Cook still looms large for all his accomplishments. The son of a poor day laborer in the north of England, he rose to greatness based solely on his abilities as a navigator and leader. When he began the first of his three epic voyages, fully a third of the earth's surface was unmapped, so he was sailing blindly, with no knowledge of what lay ahead and no one to help out if they got in trouble. In a tiny wooden ship, he explored uncharted areas from the far northern waters off Alaska and Siberia, south to the Antarctic Circle, finding many lands and people then unknown to the rest of the world. The charts he created were so accurate that some of them were still being used in the 1990s. By the time of his death at age 50 he had sailed more than 200,000 miles.

—*Tim Gallagher*

One of my favorite places by far on the Big Island is Volcanoes National Park, a must-see for any visitor. It's an especially good place to take a non-birding spouse or children, because there's something for everyone. The park staff will give you an excellent map of the park, showing all the roads and foot trails, when you pay the entry fee.

You can take an 11-mile drive around Kilauea's entire main caldera on Crater Rim Road, passing through both rainforest and desert and getting great views of sulfurous steam escaping from fissures far below. Twain had spent most of one night hiking around in Kilauea's great cone. "Here was a vast, perpendicular, walled cellar, nine hundred feet deep in some places, thirteen hundred in others, and ten miles in circumference!" wrote Twain. "Here was a yawning pit upon whose floor the armies of Russia could camp, and have room to spare."

The Volcano Observatory and Jagger Museum are well worth seeing to learn more about the history of Kilauea. And you may spot some Nenes, Hawaii's state bird, near the parking area. From the lookout at the observatory, I could see White-tailed Tropicbirds circling below in the volcano's cone.

The Omao, a Hawaiian thrush, is found only on the Big Island. It is still relatively common at higher elevations in undisturbed forest.

Jack had told me to be sure and stop at the Thurston Lava Tube, which is interesting to see for its own sake but is also a great place to go birding. Right next to the entrance of the lava tube is a lookout point with a rail, providing a balcony-high view into the canopy of the large ohia trees. Apapane were easy to see there, as were Omao and Elepaio. I only regretted that I didn't have my children with me. They would have loved walking through the large, hollow tube, formed naturally by an ancient lava flow.

Don't leave Volcano National Park without taking the 20-mile-long drive down Chain of Craters Road, which leads all the way from Kilauea's crater to the sea, descending 3,700 feet in altitude. But be sure to have plenty of gasoline in your car, plus some snacks and water. You won't find any services there. I spotted a couple of soaring Hawaiian Hawks on the way down and spent half an hour at the Holei Sea Arch, watching Black Noddies flying along the spectacular sea cliff. Then I continued driving until I reached the point where hot lava had spilled over the roadway a few years earlier, permanently cutting off the road. It was fun hiking over the rocks, snapping pictures of traffic signs half-buried in lava. I decided to join the throng of people making the trek out to the most recent lava flows. The last 20 minutes of the walk, it was almost unbearably hot, like being inside an oven, the air stifling and dry, with brittle lava rock crackling underfoot. The hot lava glowed orange in the dusky light. I can't say I saw any birds, but it was definitely a memorable experience.

The next morning I was on my way back to New York. I know that I barely scratched the surface of the Big Island in terms of birding opportunities. There are so many species I didn't see and so many great birding sites and hiking trails I didn't explore. I could easily have spent months there, and someday I hope to do just that. ■

FURTHER INFORMATION

RECOMMENDED BOOKS

A Field Guide to the Birds of Hawaii and the Tropical Pacific, by H. Douglas Pratt, Phillip L. Bruner, and Delwyn G. Berrett. (Princeton, New Jersey: Princeton University Press, 1987.)

Enjoying Birds and Other Wildlife in Hawaii, by H. Douglas Pratt. (Honolulu, Hawaii: Mutual Publishing, 2002.)

Hawaii: The Ecotravellers' Wildlife Guide, by Les Betelsky. (San Diego, California: Academic Press, 2000.)

PARKS AND REFUGES

Hakalau Forest National Wildlife Refuge
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Hawaii Volcanoes National Park
Telephone: (808) 967-8186
Web site: <www.nps.gov/havo/home.htm>; email: <HAVO_interpretation@nps.gov>

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Telephone: (808) 880-3112; web site: <hapuna beachhotel.com>

USEFUL WEB SITES

Big Island Visitors' Bureau: <www.bigisland.org>

Bed & Breakfast listings:
<www.stayhawaii.com>
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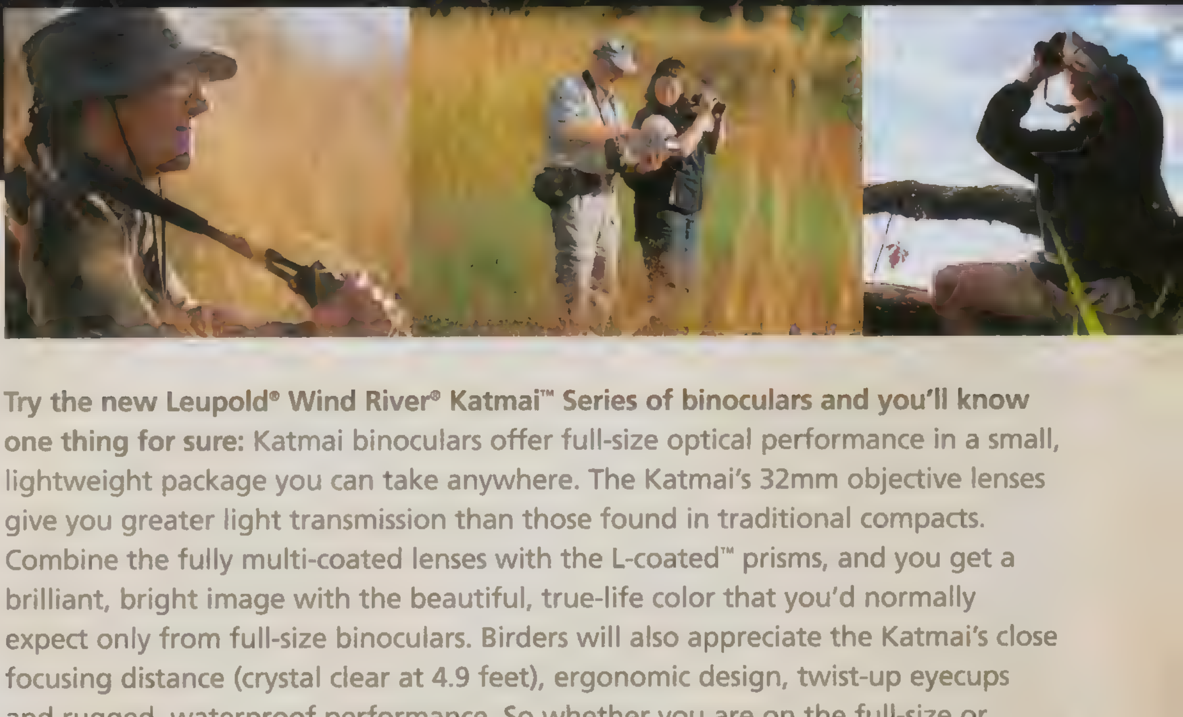

SORA (*PORZANA CAROLINA*)

Only the very fortunate glimpse the secretive Sora as it emerges from the edge of the cattails into the open and cautiously probes the soft mud in search of snails.

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NIGHT MOVES

Understanding the territorial lives of owls

BY CHRISTOPH ROHNER

What was that? A blood-chilling *hoo, hoo-hoo-hoo, hoo-oo* echoes in the night. Many people shudder in fear when they hear the hoot of an owl. For generations, people have thought hooting owls were messengers from a dark, mysterious world. To some Native Americans, a hoot has been an evil omen—a harbinger of illness or death. In European folklore, the owl was connected with death, witches, dark forces, and miraculous events. But others traditionally held owls in the highest esteem. The ancient Greek goddess Athena would slip into the shape of an owl. Subsequently, the owl has become a symbol of wisdom for the Western world. And some aboriginal cultures revere owls in the same way as eagles, emphasizing their strength and positive spiritual power.

But what is the importance of a hoot from a natural history perspective? Like the songs of other birds, hoots are used to communicate. They help attract a mate and also serve as acoustic markers, delineating a bird's invisible territorial borders. For many birds, maintaining a territory with exclusive access to food and nest sites is the key to raising a family successfully, and owls are no exception.

Studies have shown that some forest owls stay year-round in their territories, and sometimes the boundaries change very little for a decade or more. But what are the territorial rules in this nocturnal world of owls? How are their boundaries drawn, and how are they contested? Is it dangerous for an owl to trespass, and does every owl gain a territory?

A recent study in Canada's Yukon has answered some of these questions about the Great Horned Owl (*Bubo virginianus*), North America's most widespread and fiercest nocturnal bird of prey. The scene of this research is the northern boreal forest or taiga. Unlike many places where this species occurs, the taiga ecosystem faces dramatic change on a regular basis. Every 8 to 11 years, the number of snowshoe hares explodes, only to crash again. This population cycle of about 10 years has been documented since the late 1700s. As an abundant, medium-sized mammal, the snowshoe hare forms the main prey base for most of the predators there. Lynx are well known to follow the hares on this rough ride of opportunity and starvation, but they are not the only ones. The territorial system of Great Horned Owls is stressed and shattered by the change, which gives us a rare glimpse of owl territoriality at its extremes.

When hare numbers are on the increase, life is easy for the owls. Almost all pairs breed every year. Great Horned Owls never have large broods, but most of their three to four nestlings survive. In the Yukon study, researchers attached tiny radio transmitters to the owls in the study area, each broadcasting a unique signal that the researchers could track and use to identify the individual owl. The transmitters have a life span of more than two years. Data collected in this way are providing remarkable insights into the secretive lives of these birds away from their nests.

GREAT HORNED OWL BY RON AUSTING

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CHRISTOPH SCHMID

The Great Horned Owl (left) is North America's most widespread nocturnal bird of prey. Their territorial hoots are a familiar nighttime sound across the continent. Above, a pair of Great Horned Owl nestlings.

GARY KRAMER

The young owls stay on their parents' territories all summer, and they clearly know the boundaries. In September, the young suddenly depart in what looks like a synchronized exodus or a migratory wave. Then the territorial activity of resident owls shoots up, and the cold autumn nights become filled with deep hoots and the screeches of young owls as they move through new areas.

Are these young owls driven away by their parents? Although we cannot answer this question unequivocally, some observations are revealing. Researchers saw one adult female chase a youngster away with much hooting. But a quick check of the radio-telemetry receiver revealed that her own young were still nearby. The mother clearly differentiated her young from other intruding juveniles. Shorter days trigger migration in many birds, but observations of owl family breakups show that they are more complex. In a year when snowshoe hares became scarce, for instance, the wave of dispersal was delayed, and three of seven juvenile Great Horned Owls never left their parents' territories (their begging calls were heard far into winter). Under ideal circumstances, juveniles seem to disperse as quickly as they can, because nothing is more important than gaining a good start in life by taking possession of a free territory. But when conditions are tough, parents tolerate their young staying with them longer, and they may even feed them long after the normal dispersal time if necessary. Perhaps young owls are finally expelled when the next mating season approaches in February, but there are no data yet to document this claim.

Dispersing juveniles show a wide range of behaviors. Some move in a straight line, covering dozens of kilometers in a single night. Some linger in the area for a while and then disappear. Two sisters moved in different directions but only went two territories away from their birthplace. There they settled and raised families without ever exploring any more of the world. Male owls tended to disperse farther than females. More than half of the young male Great Horned Owls studied moved more than 35 kilometers from their natal territories.

Many of the monitored owls did not acquire a territory the following year. They became nonterritorial floaters. What is the life and the fate of an unattached owl existing on the edges of the tight patchwork of defended territories? So far, we have only been able to guess, but data from the radio transmitters are providing rare glimpses into the natural history of floaters.

In contrast to common belief, floaters are not nomads that are continually on the move.

CHRISTOPH SCHMID

This young Great Horned Owl will soon be hunting on its own. Will it establish a territory or join the ranks of floaters?

After a phase of dispersal, they became relatively sedentary. Only 20 percent of the distances they moved from week to week were larger than 10 kilometers. Home ranges of floaters were about 25 square kilometers in size, compared with about 5 square kilometers for a territorial owl pair. Several floaters lived in the same general area, and the spaces they used overlapped broadly.

Floaters were silent and secretive. Researchers spent much time traveling on snowshoes in the forest, tracking owls and taking notes on what they heard. Territorial owls tended to hoot every evening at least a few times and when leaving their daytime roosts. In all of the 11 territories, every male was heard, and they hooted 26.7 percent of the monitored time. None of the 6 floaters gave a hoot or any call during 16.8 hours of monitoring.

Floaters also seemed restricted in where they could go. Their use of space was not uniform. They preferred certain core areas, as if they were stitching together several disconnected pieces of a territory. Interestingly, these core areas were placed exactly along the boundaries of existing territories, while floaters avoided the centers. Floaters apparently have some kind of mental map of the territorial landscape. Perhaps the vigorous hooting of almost all territory holders at nightfall ensures that both floaters and neighbors calibrate their mental maps daily and avoid areas where they would be unwelcome.

How dangerous is it to trespass into another territory? We cannot answer that question with certainty. Neighboring owl pairs seem to have highly ritualized hooting matches with little risk of actual damage. Males bow forward and expose their white throats while hooting. This can go on for more than half an hour, and an observer can use these encounters to map the boundaries of territories between the males. Often the females join their mates, even when an incubating bird has to come off a nest with eggs at freezing temperatures of –25° C. Perhaps some of these encounters are actually provoked by a floater moving along the boundary between territories. The neighboring pair may have approached from the other side of the boundary in response.

It is unlikely that any owl would attack another when both are fully aware of each other's presence. Wounds from sharp talons could devastate their ability to fly and hunt. Also, most owls are ambush predators that only attack their prey when they have the advantage of surprise. We do not know what happens to a floater detected by a territory owner. Fatal fighting could occur when a major part of a contestant's lifetime reproductive success is at stake. This may indeed be the case when hare populations decline toward the lowest point of the cycle. Four dead Great Horned Owls—which may have been killed by other Great Horned Owls—were found in the study area. In one case, a Great Horned Owl was seen standing on one of these carcasses, and owl footprints were observed at a second.

Some researchers argue that floaters are simply immature owls that are gaining experience before settling down—in other words, a nonterritorial lifestyle may be an alternative and adaptive strategy—but the field evidence does not support this view. Some Great Horned Owls were capable of breeding at the end of their first year, and a series of studies on lifetime reproductive success in birds revealed that breeding early is paramount. Although one observation of Flammulated Owls showed that a secretive male can steal copulations from another male's mate without prior vocalizations, none of the floater males among the monitored Great Horned Owls made attempts to intrude into defended territories during the female's fertile period. Evidence from DNA analysis in other species, such as the Boreal Owl, also confirms that extra-pair copulations are relatively rare in forest owls.

The behavior of territory owners indeed seems to limit the breeding density in an area. Some sexually mature owls in the Yukon study were excluded from gaining a territory, forced into the underworld of floaters, and restricted from breeding. This was illustrated by an interesting result. Sometimes vacancies occurred because a territory owner died of a natural cause. These were readily filled by new owls, thus proving the existence of a pool of nonterritorial birds waiting for an opportunity to reproduce.

Territorial behavior was also responsible for some unexpected events. When the number of snowshoe hares declined, the owl population still kept increasing—despite reduced breeding success. You would expect owls to begin leaving poorer territories when times get tougher, so population density would start to decrease, but this was not the case. New territories emerged on the map, and this happened at places that had been preferred by floaters and were at the periphery of existing territories. Most likely, the owners of existing territories simply could not keep up their defense as an increasing number of floaters trespassed and even started to hoot at the periphery of their territories. Furthermore, foraging required more time, which may have limited the energy available for defense. Yet an increase in the number of owl territories at a time when prey is declining does not seem right. How could this happen?

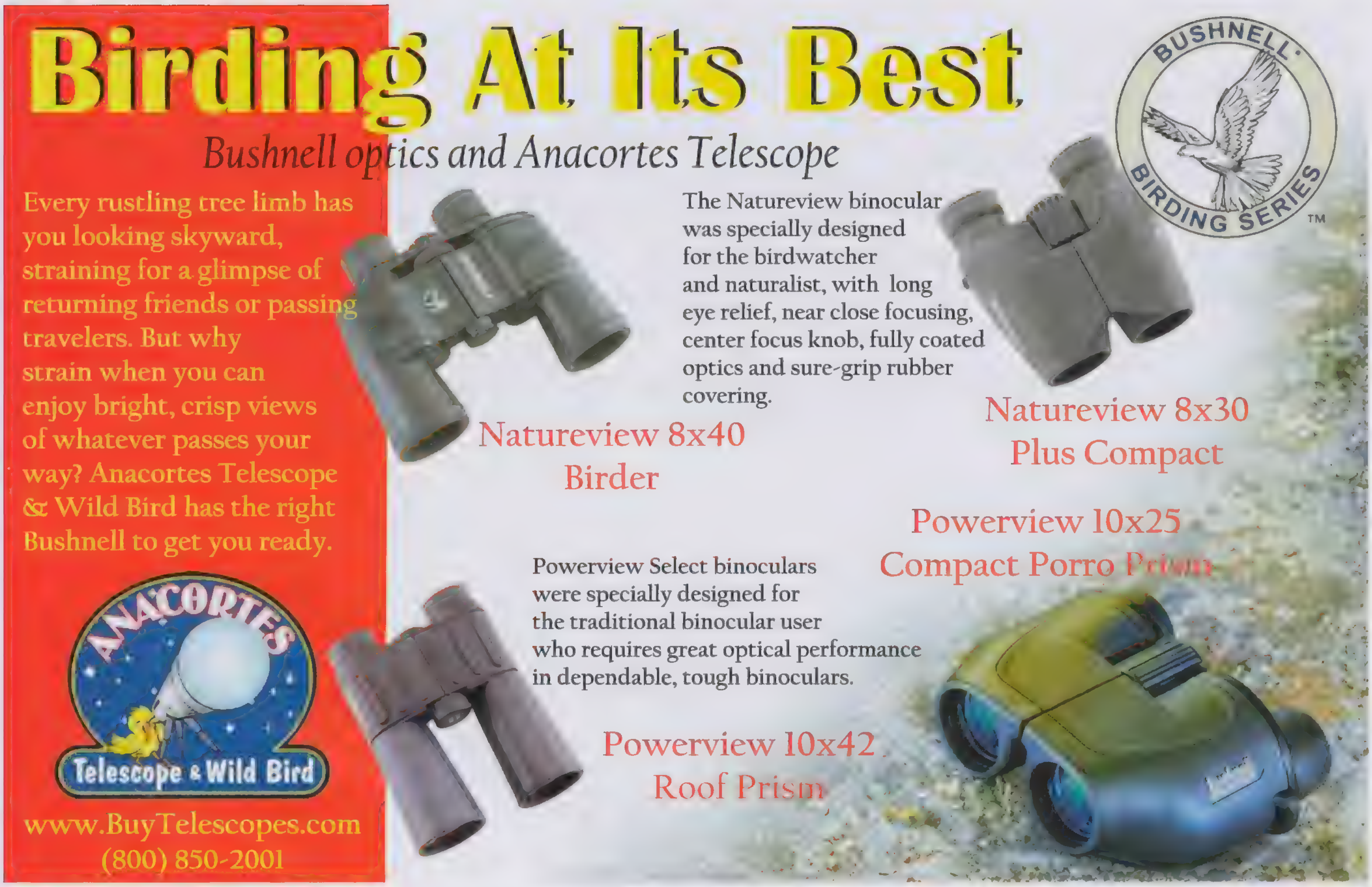
If territories are being held so strongly, there must be a great advantage to owning a territory. When hares further declined it was interesting to see that floaters emigrated from the study area before territory owners, and floaters suffered higher mortality rates before owners were affected. But what exactly is the advantage of owning a territory? Having exclusive access to an area could be vital to a predator that temporarily depresses its resource by capturing vulnerable animals or by alerting prey when an attack fails. In both cases, a territory owner can revisit these spots after an optimal interval—if no other predator is disturbing the picture. In addition, having local knowledge of perches and the best angles of attack in a forested area full of cover for prey may be important. Owls have developed special senses to locate prey at low light levels, but because their perception is not perfect in the dark, researchers suspect that they must fill in some information from memory. This combination of circumstances has been described as the "nocturnal syndrome" and may be the reason why forest owls are particularly sedentary, territorial, and conservative, and why they live so long.

Perhaps the most significant lesson we can learn from studying the territorial lives of owls is to be careful how we interpret field results for conservation purposes. We often estimate trends in bird populations by counting singing males. But this only covers the territorial part of the population. In the extreme case of the Great Horned Owl, researchers estimate that up to 40 to 50 percent of the population can live as nonterritorial floaters. In the study, these secretive owls were silent, did not respond to the playback of hoots, and would not have been detected in any conventional survey. Because the members of this underworld are affected by deteriorating environmental conditions before the territory holders, our census results may have a serious built-in delay before we can detect any signs of decline in hooting males. ■

Christoph Rohner studied the population ecology of owls in the northern forest. Although he is involved in various research efforts in Canadian ecosystems, owls have remained a lifelong fascination. He lives and writes in Edmonton, Alberta.

Further Reading

Rohner, C., F. I. Doyle, and J. N. M. Smith. 2001. Great Horned Owls. Pages 539–576 *in* Ecosystem dynamics of the boreal forest: The Kluane Project (C. J. Krebs, S. Boutin, and R. Boonstra, Eds.) Oxford University Press, New York. 511 pp.



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The Serengeti of South America

Text and Photographs
by George Oxford Miller

Brazil's Pantanal, a wetland the size of Kansas, harbors the highest concentration of wildlife in the Western Hemisphere

At 15 days old, a Hyacinth Macaw—the largest and most spectacular of the Psittacidae family—looks like a kindergarten Play-Doh project. Cesar Correa, a research biologist with the Projeto Arara Azul, "Blue Macaw Project," connects a climbing rope to his harness and hoists himself 15 meters up to the nesting box. He gingerly removes the pink, naked chick and lowers it to the ground in a bucket. His assistant, Vanessa Bernado, measures and weighs the hatchling before returning it to the security of its box.

The macaw parents watch nervously from a nearby tree. They complain with a hoarse gurgling noise and an occasional loud squawk that mimics their Portuguese name, arara. Cesar keeps his eyes on a Toco Toucan that flies into another tree. "He's watching us," Cesar says. "Toucans prey heavily on eggs and hatchlings, but the parents won't let him get close. Besides toucans, jays, Black Vultures, and coatis raid the nests. Nest mortality runs about 40 percent."

We squeeze into the researchers' pickup truck and crash through the forest to the next nesting tree. Cesar straddles a winding cow path and careens with total disregard over bushes, small trees, and large mud holes. The World Wildlife Fund, one of the sponsors of the Macaw Project, gets its money's worth out of this vehicle.

Once poaching for the pet trade presented the greatest threat to the handsome macaws. Illegal capture is now under control, but logging and habitat destruction continue to threaten the specialized birds' survival. With the help of the Blue Macaw Project, founded in 1990 by Neiva Guedes, the numbers of the endangered birds have increased from 1,000 to about 3,000. Forty-two cattle ranches, or fazendas, cooperate in the 400,000-hectare monitoring area. The field studies work out of Caiman Ecological Refuge, a 5,000-hectare reserve set aside for ecotourism and wildlife preservation in the middle of a 53,000-hectare fazenda.

Forty inches in length, the spectacular Hyacinth Macaw is the world's largest parrot. Habitat destruction threatens the survival of the species in the wild.

Caiman Ecological Refuge is a 5,000-hectare reserve set aside for wildlife preservation and ecotourism in the heart of the Pantanal. The Blue Macaw Project is headquartered in the refuge.

The Pantanal encompasses 81,000 square miles on the borders of Paraguay and Bolivia and the Brazilian states of Mato Grosso and Mato Grosso do Sul. From October to April, rain turns the vast basin into the world's largest wetland. Hemmed in by mountains and plateaus, the sea of rising water gobbles up 80 percent of the landscape. Roads vanish, temporary rivers wind through the forests, and pastures turn into sloughs and swamps. The first Portuguese maps labeled the region the Sea of Xaraes.

Think of the Pantanal as the Serengeti of the New World. The Amazon has the reputation for wildness, but the Pantanal—with 1,200 species, the highest concentration of wildlife in South America—is where you actually can see the abundance of creatures. An estimated 656 species of birds, 102 mammals, 177 reptiles, and 264 fishes call the Pantanal home.

With 10 million caimans, the Pantanal has 20 times more crocodilians than humans. And that's only the beginning of a wildlife bonanza that includes jaguars, tapirs, deer, anteaters, armadillos, and monkeys. The wilderness is one of the last safe harbors for the maned wolf, giant otter, giant anteater, and giant armadillo, all endangered and all nearly impossible to see except for a fortuitous glimpse, as are the 30-foot anacondas that slither through waist-deep sloughs to stalk 100-pound capybaras, the world's largest rodent.

So, it's with no little anticipation that we come to Brazil to see one of the world's most remarkable wildlife spectacles. We arrive in September when dry land once again reclaims the inundated roads and savannas. Jabirus, herons, ibises, and jacanas tiptoe around caimans in vanishing ponds, and noisy flocks of hundreds of

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parakeets forage on mud flats.

With macaws, toucans, ibises, chachalacas, and parrots filling the trees, each dawn breaks like a blast from an out-of-tune garage band. Birds from North America, the Andes, and the Argentina pampas zero in on the Pantanal for the feeding frenzy that begins when the rains stop. When the world's largest oasis starts drying up, the millions of fish that spawned in the rising waters have no place to go. It's fast-food time for the birds.

Cattle ranches, some encompassing 1,000 square miles, have shared the bounties of the Pantanal for 200 years. Gray zebu cattle, a humped breed from India that tolerates heat and wetness, coexist with the wildlife—the seasonal flooding makes overgrazing impossible. Many of the ranches operate ecolodges, most with fewer than a dozen rooms, that offer wildlife tour packages with bilingual naturalist guides. We booked Caiman Ecological Refuge, the first ecolodge in the region. Guests stay at four small lodges scattered across the forest-savanna ranchland and go on daily excursions with expert guides.

Blue Macaw Project researcher Vanessa Bernardo (above and at right) examines a 15-day-old Hyacinth Macaw chick. On the facing page, Cesar Correa scales a manduvi tree to repair a macaw nest cavity.

After the excitement of bouncing through the woods and watching Cesar and Vanessa scaling trees, we're eager to rejoin them after lunch. Cesar has been with the project for five years and Vanessa one year. "I came to stay for one month," she says as we pull off the dirt road and head cross-country. "I just got my contract renewed for the second year."

Of the 160 nests they monitor on the refuge, the team checks about 13 a day. Half are boxes and half natural cavities. Ninety percent of the Hyacinth Macaw nests occur in one species of tree, the manduvi, which has soft heartwood. We pull up to a large manduvi with an active nest, but not of a hyacinth. This hole has been usurped by an Aplomado Falcon.

The two resident macaws and their yearling watch silently while Vanessa scales the tree to check the progress of the falcon nest. Like a typical human teenager, the juvenile sits a meter apart with its back turned to the cuddling parents. Hyacinths keep their young with them for one-and-a-half years to socialize and teach them where to find the widely scattered palms that bear the nuts they eat. The birds take seven years to reach sexual maturity.

In the year between breeding, Hyacinth Macaws closely guard their nests and aggressively drive away any encroaching macaws. But hawks, parrots, and Muscovy Ducks move right in. Nest sites come at such a premium that Cesar often puts up nest boxes close to the natural holes, just to take the pressure off the macaws. Vanessa reaches the cavity and carefully peeks in. She backs off and laughs nervously. "The falcon is on the nest," she says. "It's cupping its wings over the eggs. I'm not reaching my hand in there!"

A Laughing Falcon occupies another box we check. Cesar taps on the tree and the bird flies out and circles. It screams its witchlike cackle until we all start laughing. Vanessa checks the nest. The one egg is fine but not due to hatch for another week.

Besides providing extra boxes for competing hole-nesting species, the researchers renovate existing cavities that are unsuitable for nesting. Repairing the holes requires patience and outguessing both the predators and the

macaws. Cesar placed a board over the top of one nest hole to form a little awning. "Toucans got the chicks from 1999 until 2001. Then I put a board above the hole so they couldn't see inside. Last year the macaws successfully raised one chick."

One massive manduvi tree illustrates the importance of home improvement. Twenty meters up the trunk, a four-foot-long opening exposed a deep cavity and allowed Black Vultures to prey on the nestlings. Rain drained down the trunk and poured into the nest from a higher opening, and the macaws used a third, smaller entrance. In the upper branches, three fluffy Jabiru nestlings peer over the edge of a giant conglomerate of sticks. A dozen Monk Parakeets built their condo in the underside of the stork nest, while a Muscovy Duck occupies a nest box on an adjacent tree.

Cesar hooks up his ropes and scales the tree to replace several chewed-up boards that seal the gaping openings in the trunk. The Hyacinth Macaws love to chew, and they often destroy the nest boxes and the planks that repair their natural sites. Hanging like a marionette, Cesar measures and saws pieces of board to patch the damaged section.

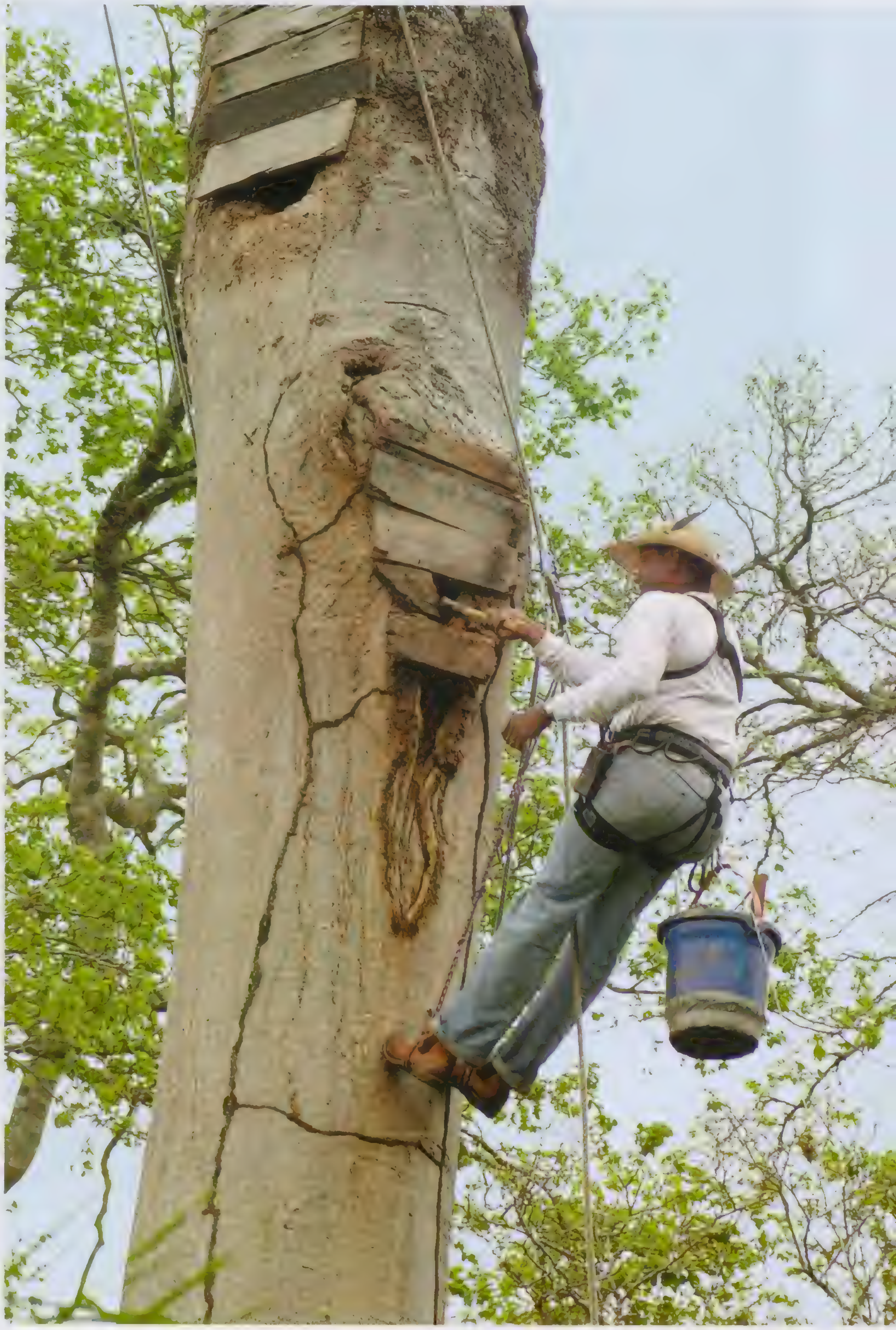
"We've been working on this nest for five years," Cesar says. "Last year the macaws had their first successful nest. They fledged two chicks."

Hyacinth Macaws lay two eggs, but usually only the first nestling to hatch survives. If the opportunity arises, the biologists take the second egg and place it in a foster nest that has lost its eggs. Incubating and hatching the eggs to use in captive-release programs has not proved very successful with this species. "The birds require too much socialization," Cesar tells us. "Only about 10 releases have succeeded."

During the rainy season, the researchers sometimes have to ride horses or even wade through chest-deep water to monitor the nesting sites, but today the pickup truck bushwhacks through the undergrowth with no problem. Cesar stops abruptly and whips out a GPS unit. "Are we lost?" I ask, only half joking.

"No, I saw some macaws feeding here last week and I want to mark the location on my map," he says. As specialists, Hyacinth Macaws eat the nuts of only two species of palm. The acuri palm forms dense bushy thickets and fruits year-round. The tall bocaiuva palm produces fruit seasonally and is important during the nesting period. The macaws' powerful beaks crack the rock-hard nuts like a sledgehammer.

"Yesterday, I saw 16 macaws feeding in a



Low-growing acari palms form dense, bushy thickets. Their nuts (above) provide a year-round food source for Hyacinth Macaws.

field of bocaiuvas," Cesar says. "Let's go check it out." Sure enough, as the evening shadows lengthen, the majestic one-meter-long birds gather to feast on the nuts. We edge out of the pickup quietly and gaze at the raucous birds. Their cobalt feathers flash in the sun and their yellow face markings look like clown makeup. After foraging on the ground, they congregate in a nearby tree and squawk like soccer fans cheering a game. It's party time, macaw style. At one point, 20 of the rare birds hang from the branches.

Besides the Hyacinth Macaw, the Jabiru is the icon bird of the Pantanal. Each morning we wake up in our lodge at the edge of a lake and see a pair foraging a few meters from our balcony. Like an automated Disney creation, they wade through the shallows in slow motion, sloshing their stout bills through the water. When not actively feeding, they stand motionless for hours.

Because birding is our major interest, the lodge schedules time for us with their expert birder, Victor do Nascimento. Victor is a product of the ecotourism industry. He was born on the ranch and went to school there, but instead of becoming a cowboy, he signed on at the lodge. "I always liked the large birds," he says as he adjusts his CD player. "Six years ago I got a pair of binoculars and some of the leaders with the Field Guides tour company helped me get started. They come here every year."

Now, Victor's skills place him in the top echelons of professional birders. As we walk along, he knows every call we hear. He entices most birds to fly in close with an assortment of whistles and *pshews*. When the repetitive whistle of the Ferruginous Pygmy-Owl doesn't work, he puckers his lips and "throws kisses." He hears the musical cry of a Red-billed Scythebill and whistles him into a nearby tree.

When he hears a faint call in the distance, Victor punches a number from memory into his CD player and holds up a four-inch speaker. In a few minutes, a Rufous-tailed Jacamar flits its way to a limb 10 meters away.

"It helps to know the bird songs and what habitat they live in," Victor says. When no birds are obvious, he knows which birds should be around and plays the right calls. In a savanna setting, he changes CDs and plays the song of a Spot-backed Puffbird. The curious bird flies up to investigate. Next, he brings in Barred and Great antshrikes. In an action-packed 3 hours, we see 94 species along a 2-mile stretch of road by the lodge.

The abundance and richness of wildlife in the Pantanal results from the great diversity of habitats. In an hour's walk, we explore upland savannas, hummocks, seasonally flooded forests, dry forests, mixed deciduous and palm woodlands, and permanent and seasonal lakes and lagoons. On our hikes, we see collared and white-lipped peccaries, gray brocket and marsh deer, coatis, howler and brown capuchin monkeys, capybaras, tapirs, and a giant river otter. On the night outings, we see a jaguar, three ocelots, giant and lesser anteaters, pauraques, Common Potoos, and crab-eating foxes. In our spotlight, the eyeshine of hun-

PLANNING A TRIP TO THE PANTANAL

Reservations: Booking the ecolodges, arranging ground transportation and connecting flights, and coordinating with local operators is possible but difficult unless you speak Portuguese. Check out Brazil Online, a Miami tour operator with Pantanal experience, at (888) 527-2745, <www.brol. com>. Four-night packages are available at Caiman Reserve, <www.caiman. com.br>, email: <caiman@caiman.com.br>.

Visas: Brazil requires a $100 visa from U.S. citizens. Applications must be made in person or by carrier at the Brazilian Consulate with jurisdiction for your area. For instructions online see <http://www. brazilny.org/index_English>.

Getting there: Most major U.S. airlines fly to Brazil. VARIG, (800) 468-2744, <www.varigbrasil.com/english>, flies from New York, Los Angeles, and Miami with connections to U.S. cities on United Airlines.

Recommended guidebooks: *Birds of Southern South America and Antarctica* (Princeton University Press); *Neotropical Rainforest Mammals: A Field Guide* (University of Chicago Press); *Lonely Planet's Brazil.*

dreds of caimans glows on the surface of a lake like lights in a distant cityscape.

Around the dinner table one night, several of the guests describe their most memorable impressions of the trip. One man recounts how a group of capybaras, which don't look like water-loving animals at all, surprised him by rushing to the lakeshore and plunging into the water. The stellar display was astounding in a night sky so dark that the Milky Way looked like a cloud.

My epiphany occurred in a rainstorm. We were bouncing along in the back of an open-sided truck looking for wildlife when a rare dry-season storm hit. Blowing rain pelted us and water pouring off the canvas roof drenched us. Then off in the distance I saw a towering canopy tree with a nest on top. Two Jabirus stood stoically on the nest like statues facing the howling rain. The image stays in my mind as the epitome of the Pantanal, an ecosystem whose life depends on the pulsing ebb and flow of the seasonal rains.

Being able to see wildlife in a natural setting on such a grand scale presents a once-in-a-lifetime thrill. Though not pristine, the Pantanal preserves the wildness of a healthy ecosystem the size of most Midwestern states. It demonstrates the richness in biodiversity that once covered the planet. ■

George Oxford Miller is a freelance writer and photographer and the author of several books. He lives in Clarksboro, New Jersey.

The Jabiru (above) is one of the icons of the Pantanal. Local birding guide Victor do Nascimento (at left) plays a recording of a Spot-backed Puffbird to draw the bird closer.

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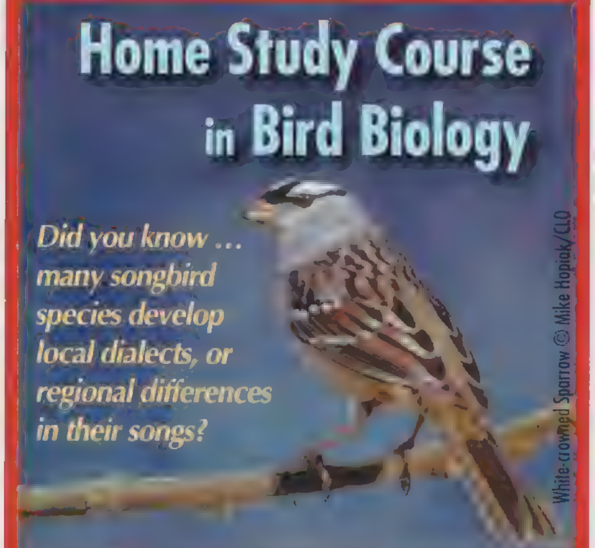

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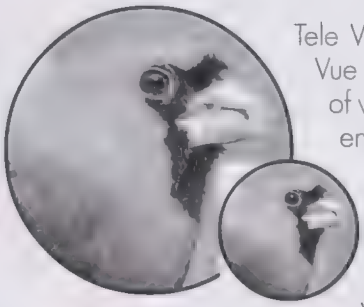

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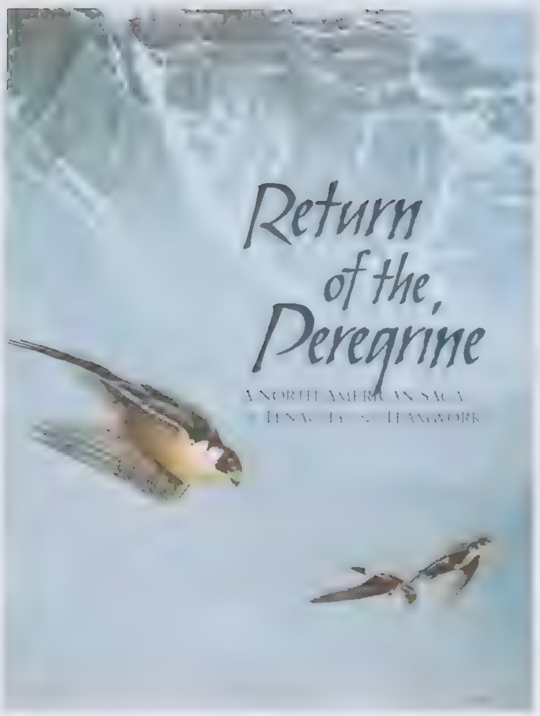

RETURN OF THE PEREGRINE

Edited by Tom J. Cade and William Burnham

(Boise, Idaho: The Peregrine Fund, 2003)

In some ways, things have never been better for the American Peregrine Falcon. The species is breeding across the continent in numbers not seen for decades, and its population continues to rise by about five percent a year.

From our present vantage point, it's hard to imagine how bad the situation was in the mid-1960s when Joe Hickey convened a conference at the University of Wisconsin at Madison to address the Peregrine Falcon population decline. Attendees came from across the continent and from overseas to discuss the dilemma, and what they found was staggering. The Peregrine Falcon population had been in freefall for more than a decade and had vanished from vast areas of its former range in North America and northern Europe. Indeed, the bird had already become extinct as a breeding species east of the Mississippi in the contiguous United States.

Although it would take several years to prove, organochlorine pesticides such as DDT were ultimately shown to be the culprit, causing the birds to lay thin-shelled eggs that often failed to hatch. The falcons absorbed high levels of pesticide from the birds they consumed, and it accumulated in their fatty tissue.

For most animals, a scenario like this would have spelled certain doom. DDT was an amazingly effective pesticide, and several major industries—agribusiness, chemicals—had a vested interest in continuing to produce and use it. What did it matter if a few species of birds vanished from the earth?

What no one could anticipate was the level of passion the Peregrine Falcon inspired in its admirers. Countless people rallied around the cause of saving the peregrine, donating their time, effort, and money to prevent the bird's extinction. An unlikely alliance of scientists, conservationists, bird watchers, falconers, and other peregrine enthusiasts worked tirelessly for years to ban DDT and to develop methods for breeding falcons in captivity and reintroducing them into areas where they had been extirpated.

Return of the Peregrine, a new book from The Peregrine Fund, chronicles the story of the peregrine's rescue from the point of view of those who took part in the recovery effort. More than 60 authors contributed to this work, and it was clearly a heartfelt undertaking. It has chapters written by the key scientists involved in saving the peregrine as well as other chapters and sidebars by the numerous other helpers, hack site attendants, and volunteers who devoted so much of their energies for three decades to ensure that this species would continue to grace our skies.

We are especially proud that so much of the early work on the Peregrine Falcon recovery took place at the Lab of Ornithology, when Peregrine Fund founder Tom Cade was our director of raptor research. Cade spearheaded the effort at Cornell and had a raptor propagation facility built near the Lab, at the edge of Sapsucker Woods. There, Cade and his staff and volunteers produced thousands of young peregrines and released them in areas where the birds were absent or seriously reduced in numbers.

It all seems so simple now—raise large numbers of falcons in captivity and then release them to boost wild populations—but back then, many researchers thought the effort was bound to fail. In all of the centuries that Peregrine Falcons had been kept and trained by humans, they had never been domesticated. Only a handful had ever bred in captivity. How would researchers ever be able to breed enough falcons to boost declining wild populations? And even if they did produce enough young falcons, would these birds be able to survive in the wild without being taught hunting skills by their parents? Thanks to the determination of everyone involved, these problems were all worked out. One refrain rang out again and again in the book: failure was not an option.

This book documents the Peregrine Falcon restoration program from beginning to end, summarizing more than 35 years of work involving numerous organizations and hundreds of individuals. It is a tribute to everyone who took part in what was undoubtedly the most far-reaching and successful endangered species recovery program ever attempted. It's an inspiring story, and even though I was already familiar with most of the events and people involved in the effort to save the Peregrine Falcon, I couldn't put the book down.

Nearly 400 pages in length, this large, coffee-table-format book is lavishly illustrated with numerous color as well as black-and-white photographs and illustrations. I highly recommend it to anyone who admires the Peregrine Falcon.

—*Tim Gallagher*

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ARE WE WEIRD OR WHAT?

by Pete Dunne

Don't tell me you haven't ever asked yourself whether the stigma associated with being one of *those* kinds of people doesn't perhaps have a measure of merit.

What people? You know. Go ahead and say it. Say it out loud.

"A . . . bird (pronounced *boid*) watcher."

Makes you wince doesn't it? That's why we changed the name to "birder." Birder sounds more turbo, more macho, and falls in semantic accord with golfer, hunter, shopper, stripper, mugger, and other activities that society finds more socially acceptable.

Don't tell me you haven't noticed the reactions of your colleagues when they ask what you did over the weekend, and you say, "I chased a Bar-tailed Godwit." ("That's a shorebird with a really long bill," you explain.) And they change the subject to their golf handicap or the war on crabgrass.

And you can't help but notice how your kids hustle their friends out of the room when you blunder in wearing binoculars, a baggy smock with outsized pockets, and a hat so wilted and threadbare that even the wind doesn't want it.

Yeah, you know.

So let's be honest. Let's say that there is something to society's ingrained anxiety about your avocation. Let's admit that being a bird watcher has a quirky side, too.

Admit . . . that walking into a small-town diner in the West and asking whether anyone can give you directions to the nearest sewage treatment plant is not exactly mainstream conversation.

Or that being so chummy with the local landfill operator, who you exchange birthday cards with every year, is two standard deviations left of center.

Or that you would be hard-pressed to explain (on *Oprah*) why you were eager (not just willing) to spend thousands of dollars to fly to an island that is so far west they had to move the international dateline to keep it from being east, to live in an abandoned building that wouldn't meet the minimum standards for a homeless shelter, all because some bird that doesn't belong there might appear, enabling you to put the bird on a list.

This is not to say that society's rank-and-file don't have quirky affectations, too. Take lawns. I know people whose lives are indentured to the task of maintaining a vegetative monoculture with the sole purpose of lying flat and looking green. It sounds silly, but it is normal. Take football. Don't you think it's curious that America's Sunday-afternoon passion is to watch two herds of mesomorphs physically maneuver a ball up and down a flat grid because the sphere is so misshapen it can't roll the length of the field by itself? Curious it might be, but nobody thinks it isn't normal.

Consider slot machines. Now, here's a machine with the sole purpose of relieving people of their money, but it's designed to do it slowly so that the hemorrhaging can go on for hours. I've never met a person who admitted that he or she likes to lose money, but there are plenty of people who like to gamble.

Back to birding. I was a bird watcher even before there were birders, and over time I've grown inured to the social stigma that goes with my avocation. But that doesn't mean that a part of me hasn't always wondered if perhaps society is right. Maybe birding (or bird watching) isn't normal behavior, and therefore I am not a normal person. I never had anyone to ask, because all my friends are birders.

Then, just this year, I got my chance. I was staying in a hotel where a bird-watching convention was being held. There, behind the front desk, was a normal person. You could tell this because she wasn't wearing binoculars, she couldn't offer directions to the sewage ponds, and her nails were painted in a perfect replica of the pattern of a Northern Jacana's eggs, and she didn't know it.

So I asked her, "What do you think of bird watchers? A little weird or what?" Her response was not immediate. I'm inclined to think she gave her answer some thought.

"Well," she said. "They're mostly nice. And some of them seem pretty normal."

"Thanks," I said. "Nice nails. Must take hours."

"It does," she admitted. ■

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LIVING BIRD

Cornell Laboratory of Ornithology

SUMMER 2004

From Left to Right: endangered Black Rhino; Daniel Swarovski with Maasai people; Village Land Use Survey.

Mankind is the only species that can fundamentally alter the environment of this planet we share with all creatures great and small. We can do this for better or worse, but we cannot escape our responsibility.

— *Daniel Swarovski*

SWAROVSKI

DIALOG WITH NATURE

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LIVING BIRD

SUMMER 2004 VOLUME 23 NUMBER 3

GREETINGS FROM SAPSUCKER WOODS

Although I'm physically at my office in Ithaca, New York, gazing out at a drizzly late June morning in Sapsucker Woods, my mind is far away. I just returned from a two-week journey through Iceland, one of my favorite countries, and if I close my eyes, it almost seems like I'm still there—on a rocky cliff-side trail in bright sunshine with Gyrfalcons flying nearby.

I had hooked up once again with my old friend Olafur Nielsen (see "Iceland Journal," Autumn 1998), an Icelandic ornithologist who earned his doctorate at Cornell in the 1980s, and together we led a group of (mostly) Cornell alumni to some of the birdier parts of the country.

We took a boat cruise through Breidafjordur, watching puffins, guillemots, kittiwakes, fulmars, and a nesting pair of rare White-tailed Eagles on the tiny islands we passed. We spent a day on Flatey Island, observing nesting shorebirds. We hiked along the massive bird cliffs of Latrabjarg, where murres and Razorbills abound. We saw the many waterfowl at famed Lake Myvatn. And best of all, at Jokulsargjufur National Park we watched an irate little Merlin chase a Gyrfalcon across the sky, stooping at it again and again to drive the huge raptor from its nesting area.

The tour participants represented a diverse cross-section in terms of their backgrounds and careers. What unified them was a strong sense of adventure *and* their interest in birds. It's clear that birds provide a remarkable entry point into nature—particularly if you're visiting a foreign land. Learning the birds' names, field marks, calls, and habitats forces you to concentrate fully as you travel. You're not a passive sightseer; you become an investigator, learning all you can about the natural history of an area. That's one of my favorite things about birding.

Tim Gallagher
Editor-in-Chief

Cover: In its breeding plumage, a Short-billed Dowitcher sports a bright wash of reddish buff, in marked contrast to its drab, gray winter plumage. Nature photographer Cliff Beittel took this attractive portrait during a summer visit to Churchill, Manitoba.

Right: The Lilac-breasted Roller is but one of the spectacular birds in Africa's famed Okavango Delta. See article on page 12. Photograph by Theo Allofs.

Back cover: An adult male Smith's Longspur sits near his nest in the subarctic tundra of Churchill, Manitoba. Photograph by Cliff Beittel.

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Exploring Botswana's world-famous wetlands.

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Mexico's premier biosphere reserve faces threats and challenges from all sides.

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Texas boasts more hummingbird species in winter than any other state.

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Letters

ALEXANDER SKUTCH

I want to thank you for the timely article about Alexander Skutch in the last issue of *Living Bird* ("Alexander Skutch at 100," Spring 2004). Sadly, I just heard a few days ago that Dr. Skutch passed away at his home in Costa Rica, only a week before his 100th birthday. I was so glad to have made his acquaintance through the pages of your magazine and to have learned about his remote farm, Los Cosingos, and the home he built there with his own hands. His was a truly remarkable life, which author Robert McCracken Peck captured beautifully in his excellent article.

I only regret that I did not find out about Alexander Skutch earlier. I just finished reading his early book, *A Naturalist in Costa Rica,* and I have begun reading *A Naturalist on a Tropical Farm.* I hope to read much more of his work in the future. His writing inspires me in a similar way as reading an essay by Aldo Leopold or Henry David Thoreau. I encourage everyone who appreciates great nature writing to read his books. You won't be disappointed.

Ruth Smith
Los Angeles, California

ROBERT McCRACKEN PECK

Alexander Skutch
1904–2004

Not mentioned in the very interesting article on Alexander Skutch is his fascinating and vastly informative book, *Birds Asleep,* a comprehensive survey of the sleeping habits of the world's birds. It is in the Corrie Herring Hooks Series, published by the University of Texas Press. Other books by Skutch in this series include *Birds of Tropical America, A Bird Watcher's Adventures in Tropical America, Parent Birds and Their Young,* and *Life Ascending.*

Nancy P. Durr
President
Putnam Highlands Audubon Society
Cold Spring, New York

In stark contrast to the enlightened insight reflected in his writings, I've always viewed Alexander Skutch's goal of eradicating snakes as a very curious and unfortunate philosophical idiosyncrasy. Despite Skutch's view, author Robert McCracken Peck and your editorial staff should have known better. One wild species preying on another is most certainly not cruelty —it's just the way things are. You have done a disservice to snakes and other predators that suffer unreasonable persecution.

Bob Honig
Houston, Texas

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send email to <livingbird@cornell.edu>.

Remembering Sam Johnson

For half a century, the worlds of business, conservation, and higher education shared a unique leader in Samuel Curtis Johnson, who passed away on May 22, 2004, at the age of 76. Every person fortunate enough to meet this quiet man with an easy smile could sense that Sam was a rare gem. His unique combination of business acumen, generous commitment to humanity, passionate love of nature, personal humility, and abiding love of family radiated from deep within an unassuming exterior.

Sam turned a respected, fourth-generation family company (Johnson Wax) into a global enterprise, producing universally needed household products. A conservationist ahead of his time, he eliminated chlorofluorocarbons from his company's aerosol products long before government mandates. At Sam's direction, the vast S. C. Johnson production complex pioneered alternative fuels and byproduct recycling systems to minimize waste and pollution. Sam was a lifelong, outspoken proponent of corporate responsibility, both to the earth and to the people who accomplish the crucial everyday work. In 1991, the company was awarded a rare Presidential Citation for Environmental Quality Management.

For decades, Sam—together with his beloved wife Gene, sons Curt and Fisk, and daughters Helen and Winnie—have helped to create and improve outstanding schools, save some of the world's most beautiful places, and make the Racine, Wisconsin, area a vibrant place to live. Sam never lost his admiration for Cornell University, where he and Gene served as trustees and board members, and generously participated in major capital campaigns to improve places that make Cornell unique (especially the business school, art museum, and Lab of Ornithology).

SCOTT SUTCLIFFE

Sam Johnson poses with his wife, Gene, at the new Lab facility, which bears her name: the Imogene Powers Johnson Center for Birds and Biodiversity.

We are forever thankful to have known this very special man.

John W. Fitzpatrick, Director
Cornell Lab of Ornithology

Duck blinds are good places to talk, especially when there are no ducks. While hunting with Sam a number of years ago (with cameras, of course), we were standing ankle-deep in a Georgia marsh and staring up at an empty sky. Plans were underway for a new home for the Lab, and we had plenty of time to bring Sam up to date on our thinking. After a few minutes, Sam asked, "What would it take to make the Lab the best there is—anywhere?" From that moment on, the plans took a radical turn.

Birds didn't start out as one of Sam's passions; they were his wife Gene's. Sam was the consummate conservationist and chair of The Nature Conservancy, but he undoubtedly appended birds to his long list of interests out of love and respect for Gene. Both of them pushed us at every opportunity to make the Lab the best—in research, in education, in citizen science.

Midwesterners have a straightforward openness about them that Sam embodied in full. He would share his thoughts and feelings with remarkable candor, telling funny stories about himself with a characteristic impish twinkle in his eyes. Despite all he achieved along the way, Sam never became overly impressed with himself. When it came time to name our magnificent new home, Sam was firm: "This is Gene's building; her name should be on it." There are now three important buildings at Cornell bearing a Johnson name: one for his grandfather, one for his father, and one for his wife. Not one is named for Sam. That's the kind of guy he was. We will miss him sorely.

Ned Morgens, Chair
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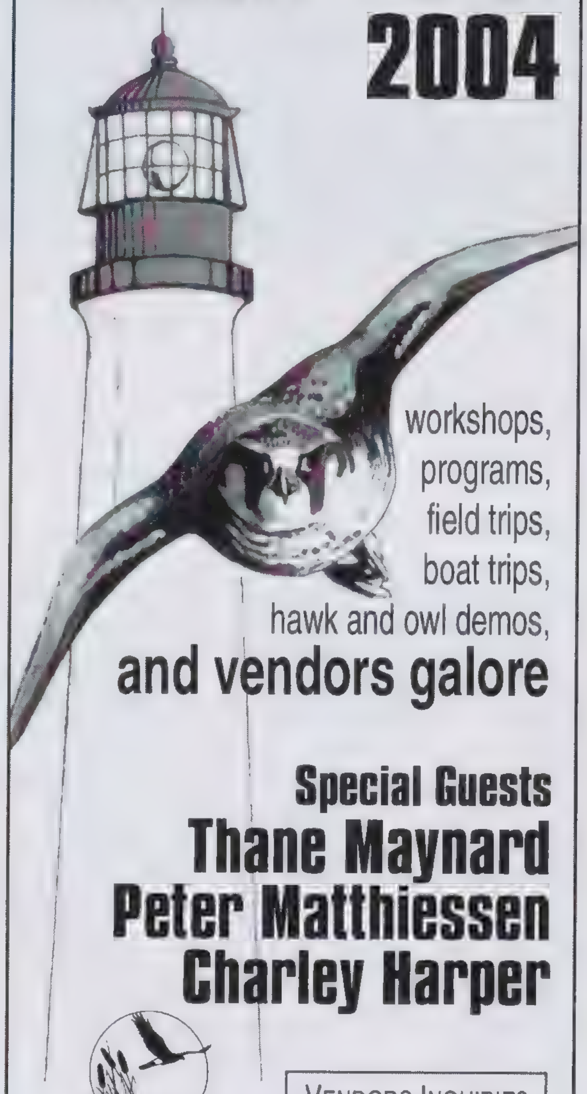

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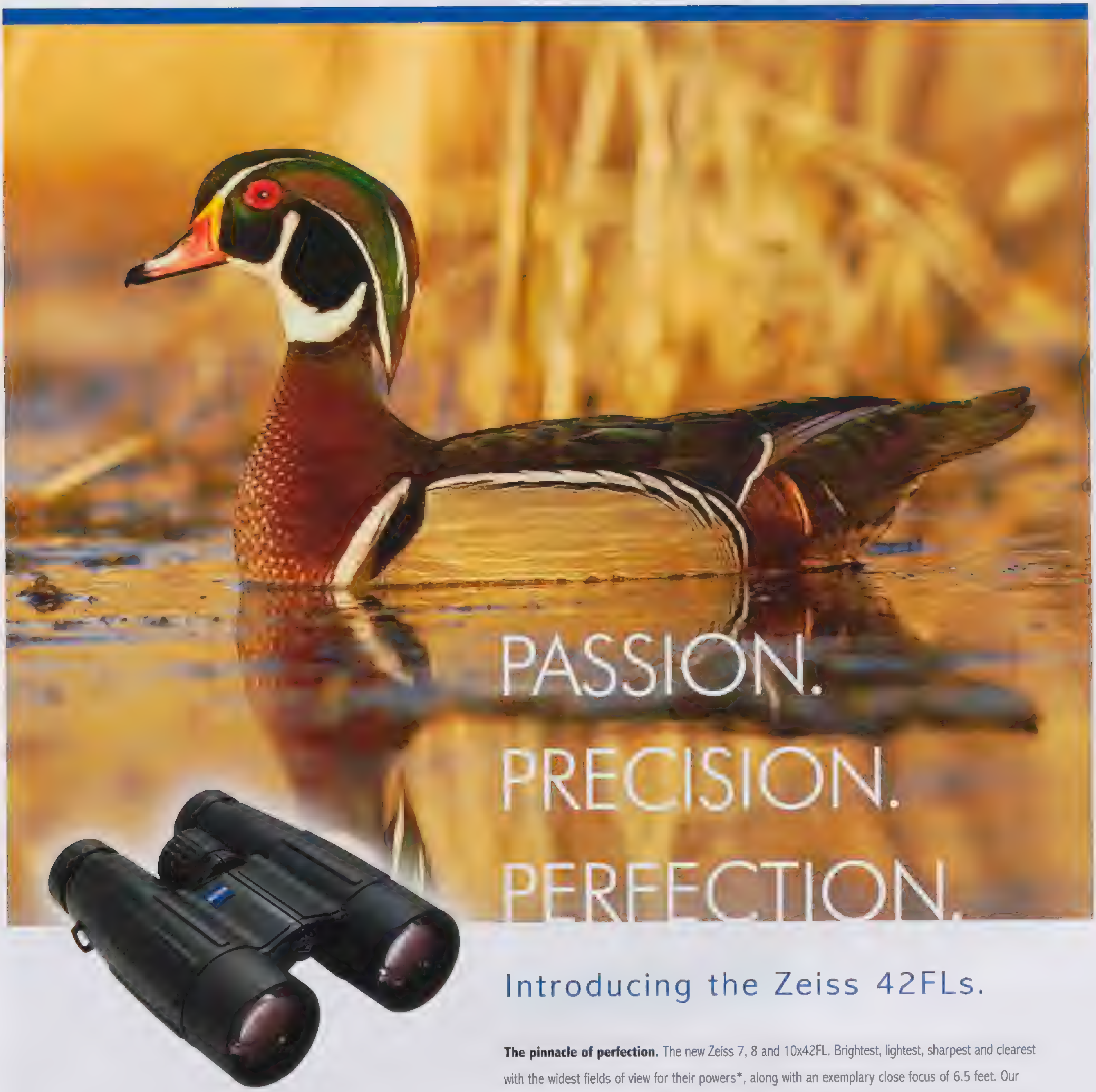

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Flying Field

THE LAND DOWN UNDER

by Mel White

With the Galahs and Drongos in Aussieland

Something was making an awful racket in the palm tree right outside my hotel window my first evening in Australia. I threw down my bags, got a beer out of the mini-fridge, sat on the balcony, and watched for a few minutes before the sources identified themselves.

Good Lord! It was a little flock of (as my field guide quickly informed me) Rainbow Lorikeets, green and blue and screaming scarlet. How did they manage to hide in the fronds for even a moment? The same way, I suppose, that some of our equally colorful New World parrots can fly into a tree and magically disappear among the greenery.

If this was a committee sent to welcome a visiting bird watcher to Oz, I appreciated the gesture. I appreciated it for the entire three minutes it took me to walk back into the room, get undressed, fall into bed, and pass out from jet lag. I don't know whether I dreamed or not, so deep was my 15-time-zone coma, but if I did I'm sure it was on the theme: what next?

Of course I woke up way before dawn, but once the sky began to brighten I went for a little stroll around Cairns, the town that fancies itself the gateway to Far North Queensland. In the land down under, "Far North" means the hot tropical coast stretching up toward Cape York, with the Great Barrier Reef offshore and rainforest inland.

In small parks and along the Cairns shore I came across a few typical Queensland birds, some common and widespread in Australia (Sacred Kingfisher, Willie-wagtail, Welcome Swallow) and some more localized (Green Figbird, Varied Triller, Lovely Fairywren).

Looking back, I'm glad that a combination of appointments and my scrambled sleep cycle kept me from intensive birding my first few days in Australia. I've been places before where I saw dozens of new species in a single day, and they inevitably run together in my memory. That certainly could have been the case here. My experiences came at a less-frantic pace, though, so I can recall exactly where I was when a flock of Sulphur-crested Cockatoos flew over (and how ear-piercingly loud they were!) and when three Laughing Kookaburras appeared in a trailside tree.

I remember this introduction to Australia when I consider a curious travel-related fact, to wit: if somebody offered me a free ticket to anywhere in the world, I'd go back to Australia in a heartbeat—this despite having visited twice and despite a globe full of places I haven't been yet and truly want to see, from Scandinavia to southeastern Asia.

Nowhere else I've been has seemed so full of possibilities as Australia. So odd, yes, but also so limitless in its novelty. Madagascar has an amazing percentage of endemic species of animals and plants, some as odd as you could hope for, but many are confined to relatively small and increasingly beleaguered parks and reserves. Although Australia is in some ways no model for conservation, it's huge, and for a visitor from the New World there seems to be something different around every corner—figuratively and literally: hundreds of eucalypts, a whole spectrum of marsupials,

GERRY ELLIS/MINDEN PICTURES

"The Australian Brush-Turkey is an outlandish, almost cartoonish ground-dwelling bird—related to pheasants and guans."

50 types of parrots and cockatoos.

There's also the matter of logistics. I'm skeptical of all kinds of cultural generalizations—the Irish are hot-tempered, the French are surly, New Yorkers are self-absorbed provincials, etc.—but during my cumulative month in the country it seemed to me there actually is something to this business of "mateship." Aussies were friendly, unpretentious, helpful, and easygoing, and I appreciated their perspective on allocating time between work and fun. Australia is safe and easy to get around in, and of course the natives do speak a form of English.

Eventually on my first trip I had time for more serious birding in northern Queensland, though it was in some ways just undirected wandering, scanning the maps for likely looking parks and natural areas. "What are these things?" I kept thinking, as I walked the trails. Fantails, whistlers, monarchs, gerygones, pseudo-babblers, whipbirds, thornbills, pardalotes. Even the somewhat familiar names weren't what they seemed: robins, shrike-thrushes, catbirds, cuckoo-shrikes, woodswallows, butcherbirds, fairywrens.

Oddest of all were the two species of mound-builder, or megapode, that I happened across near Cairns. Orange-footed Scrubfowl and Australian Brush-Turkey both are outlandish, almost cartoonish ground-dwelling birds, related to pheasants and guans. Megapode means "big foot," and like many terrestrial species they have thick, powerful legs. Mound-builder means just what it says: females in this family lay their eggs in piles of soil and dead vegetation; decay and sun provide heat. One parent (usually the male) tests the "nest" with its beak, or perhaps tongue, and uncovers or covers the eggs to maintain the proper temperature.

The birds that most contribute to the feeling of nearly infinite variety in Australia are the honeyeaters, small to medium-sized passerines with decurved bills and brush-tipped tongues adapted for feeding on nectar. (There are, of course, no hummingbirds in Australia, though there is one species of sunbird, another nectar-feeder. The small parrots called lorikeets, too, have brush-tipped tongues for feeding on nectar and pollen.) Honeyeaters can protrude their tongues in and out of their bills 10 times a second. Like hummingbirds, they occasionally eat insects to supplement their sugary diet. They're believed to have evolved in Australia, and like marsupials they have branched out to occupy many habitats and niches. There are small, pretty ones such as the White-throated Honeyeater, and big ones such as the strangely frilly and knob-billed Helmeted Friarbird, and dozens in between—for a total of around 70 species. You flip through the field guide for page after page and wonder: why so many? I suppose the same thing could be asked about the hummingbirds of Peru. All those flowers offering sweet treats.

A few years later I visited the area around Adelaide, in the state of South Australia. I'd studied the field guide more this time and felt a little better prepared. I felt that way until I stopped at Belair National Park the day I arrived and was suddenly confronted with several species of lorikeets and rosellas (small parrots) and, naturally, a whole bunch more honeyeaters. Still, there are worse things than being overwhelmed by mixed flocks of such colorful birds as Adelaide Rosella, Spotted Pardalote, Yellow-faced and White-naped honeyeaters, and Superb Fairywren.

Every area must have birds that the locals take for granted ("Oh, it's just

JOHN CANCALOSI

"The small parrots called lorikeets (such as the Rainbow Lorikeet above) have brush-tipped tongues for feeding on nectar and pollen."

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another Baltimore Oriole") but that newcomers find thrillingly beautiful. In South Australia, for me, it was the Galah, a cockatoo in soft pink and gray that appeared in big, yakking flocks out in the country and even in Adelaide's main city park. So ubiquitous and noisy is this species that "Galah" has become an Aussie slang term for a loquacious fool.

I'd learned a variation of this birdy slur on my first trip. I was in a park, binoculars up, when a woman stopped to ask what I was looking at.

"A drongo, I think," I said.

Hearing my American accent, she burst out laughing. "A drongo? That's what we call a really stupid person."

"Is that so?" I said. "I thought a stupid person was a Galah."

"That's true, but drongo is even worse."

"Worse?"

"Oh, yeah," she said. "A Galah might learn something someday, but there's no hope for a drongo."

I was hoping that I might qualify as a Galah as I tried to sort out the thornbills and rosellas—and honeyeaters—on this second trip down under. I had contacted a couple of Adelaide birders in advance and was invited to a meeting of the South Australian Ornithological Association one Friday night. Not only was I treated splendidly and showered with advice, I was invited to accompany a local couple, Trevor and Hazel Cowie, on a birding trip to the Riverland area, northeast of Adelaide, where the broad Murray River winds through the arid eucalyptus-dominated habitat called mallee scrub.

The Cowies showed me my first Emus, the flightless, Ostrichlike species that appears on Aussie coins and that in places is so abundant it's considered an agricultural pest. Pest, schmest—for me it was exciting to see them running with their odd side-to-side gait. Almost too exciting when one nearly sprinted into our vehicle. We found Mallee Ringneck, Mulga Parrot, Chestnut-crowned Babbler, Yellow-plumed Honeyeater, and Southern Whiteface, all typical of this environment. With the Cowies' local knowledge, we found an Australian Owlet-Nightjar, a nocturnal bird that's like a cross between a tiny owl and a Whip-poor-will, and Varied Sitella, which has evolved to look and act strikingly like a nuthatch, though a gregarious one.

My biggest thrill of the day was a pair of Malleefowl, the most celebrated of the mound-builders. Cryptically plumaged in gray and brown, they calmly walked about on a sandy mound as big as a bedroom. The size of Greater Sage-Grouse, Malleefowl are said to be the best of all mound-builders at maintaining a uniform nest temperature. The male can keep the eggs at a constant 91 degrees by changing the mix of sand and decaying plant material, by adding or removing soil from atop the eggs, and by letting sand heat up in the sun and placing it on the mound as cool night approaches.

After my day with the Cowies I headed to famed Bool Lagoon, in southeastern South Australia near the border with Victoria, for two final days of wandering on my own. The waterbirds I found there and nearby included Hoary-headed Grebe, Straw-necked Ibis, the large crane called Brolga, Black-tailed Native-hen, Spotless Crake, and Pink-eared and White-eyed ducks, in addition to Long-billed Corella (a cockatoo), Little Grassbird, Golden-headed Cisticola, White-fronted Chat, and—surprise!—European Goldfinch. This last is one of a too-numerous group of species introduced into Australia by homesick British immigrants, often with devastating consequences. The damage done to the country by rabbits is notorious, and predation by foxes is a major reason why Malleefowl, among other birds and some marsupials, has suffered a serious decline.

After two visits, I have barely begun to get acquainted with Australia. It's as if someone had been to the United States twice and had seen only, say, part of the Florida Gulf Coast and Virginia. This isn't a perfect analogy, but it gives you an idea. Australia is 98 percent the size of the lower 48 states, and has a bird list of more than 770. It also has gorgeous beaches, gregarious and generous people, a network of active birders, and some of the best wine in the world.

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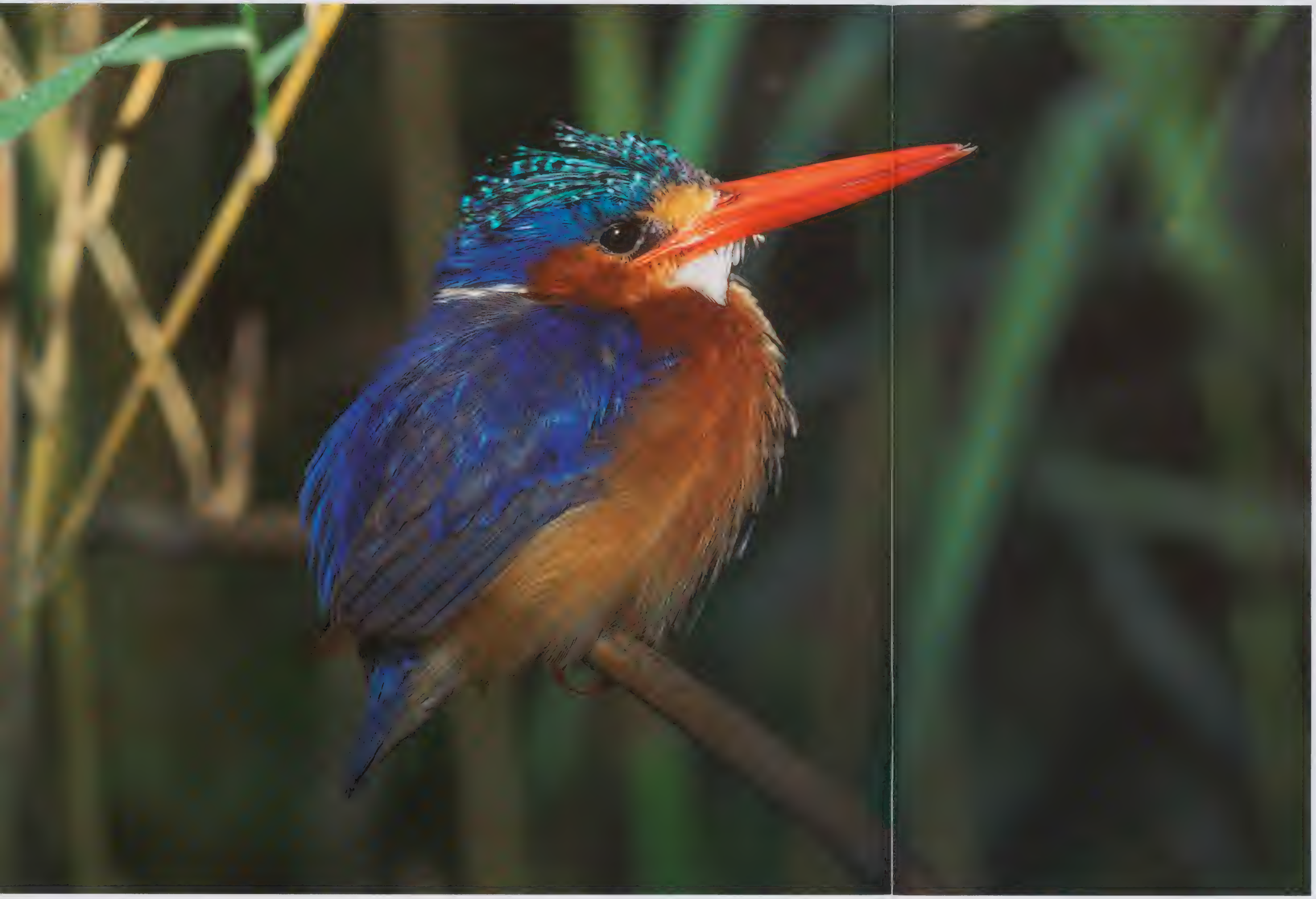
BIRDS OF THE OKAVANGO DELTA



The Okavango River is a waterway that never reaches the ocean. It spills its water into a huge, fan-shaped, inland delta in the midst of the Kalahari Desert, creating habitat for a wide array of wildlife, such as this brightly colored Malachite Kingfisher.

TEXT BY SABINE ALLOFS
PHOTOGRAPHS BY THEO ALLOFS

Exploring Botswana's world-famous wetlands

Some special places seem to have a magic spell cast over them, and the enchanting Okavango Delta of southern Africa certainly fits this description. Surrounded by arid semidesert in northern Botswana, these wetlands are created by a river that never reaches the ocean—the Okavango River, precious cord of life for the delta. Born in the highlands of Angola and fed by summer rains in the mountains, the Okavango rushes down through Angola and Namibia's narrow Caprivi Strip before entering Botswana. After meandering along a reed-fringed floodplain called the Panhandle for 100 kilometers, the river spills into a sprawling, fan-shaped inland delta, covering some 15,000 square kilometers of deep Kalahari sands with a myriad of channels, lagoons, floating reed beds, and fertile floodplains. In the outer reaches of the Delta, the channels—resembling the fingers of an outstretched hand—peter out and eventually disappear in the sand. This watery wilderness attracts a multitude of wildlife from the surrounding desiccated sandveld, offering a haven for hundreds of bird species.

We have chosen the dry season for our visit to the Okavango. The summer rains over the Angolan highlands take several months to reach the heart of the Delta, slowly raising the water level to

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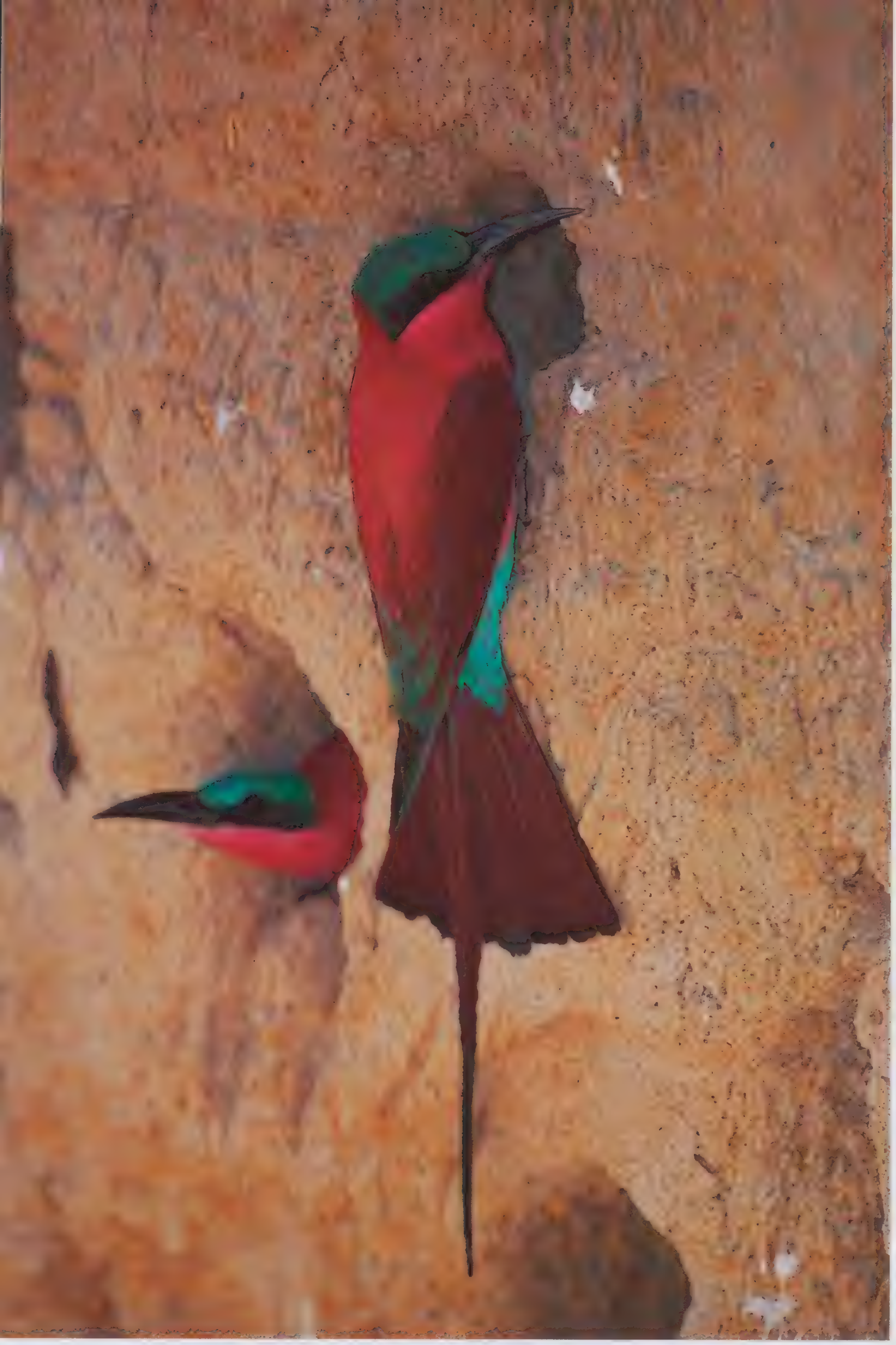


On a boat trip through the Delta, the author watched hundreds of Southern Carmine Bee-eaters (above) excavating nest tunnels in a dirt bank along the river. At right, sunset at the Moremi Game Reserve.

the high-water mark around July—midwinter in the Southern Hemisphere. Now, in early October, the waters have receded, especially in the outer areas of the Delta. We follow the river on its course through Namibia and into Botswana.

Near Shakawe, we get our first impression of the magnificent birdlife of this riverine habitat. Gliding slowly downriver in a motorboat, our guide weaves his way expertly through the narrow channels that swing away from the main river course to the east. Dense thickets of reeds tower above us on both sides as we search the branches just above the water for Malachite Kingfishers. One suddenly darts across the channel, an electric-blue flash, and perches on a horizontal shoot nearby. A tiny speck before a wall of green, he eyes us curiously, the rays of the early morning sun dancing on his brilliant plumage. Then, unexpectedly, he plunges into the water like a stone, comes up with a silvery fish in his bill, and returns to the same twig. Our guide points to a hole in the bank, the entrance to a nesting tunnel that the kingfisher and its mate are currently using for breeding.

As we turn a corner in the river, we spot a Goliath Heron fishing in a grassy lagoon next to the river. Disturbed by our presence, it lifts effortlessly into the air on huge wings, disappearing with slow wingbeats over the emerald sea of reeds. With the incessant croaking of frogs and chirping of crickets ringing out around us, we pass a small breeding colony of endangered African Skimmers on a sand bar in the main river. The nests are only deep scrapes in the sand, easily accessible to local people, who often collect the eggs for food and thereby contribute significantly to the decline of these elegant birds.

Another boat excursion takes us to a steep cut-bank rising straight from the river, where we are greeted by the frantic activity of hundreds of Southern Carmine Bee-eaters excavating nesting tunnels in the bank. At their most active in early morning and late afternoon, they enter the tunnels headfirst, pushing out clouds of sand with their feet. Relentless noisy screeching and twittering accompany their work. While one partner is busy inside, the other often guards the entrance, hanging on the wall in front of the hole and hacking viciously at intruders with its bill. In the battle for nesting space, one bird drops down on another from above, instigating an aerial fight in which the birds chase each other like miniature star-fighters, until one of them reclaims the tunnel opening.

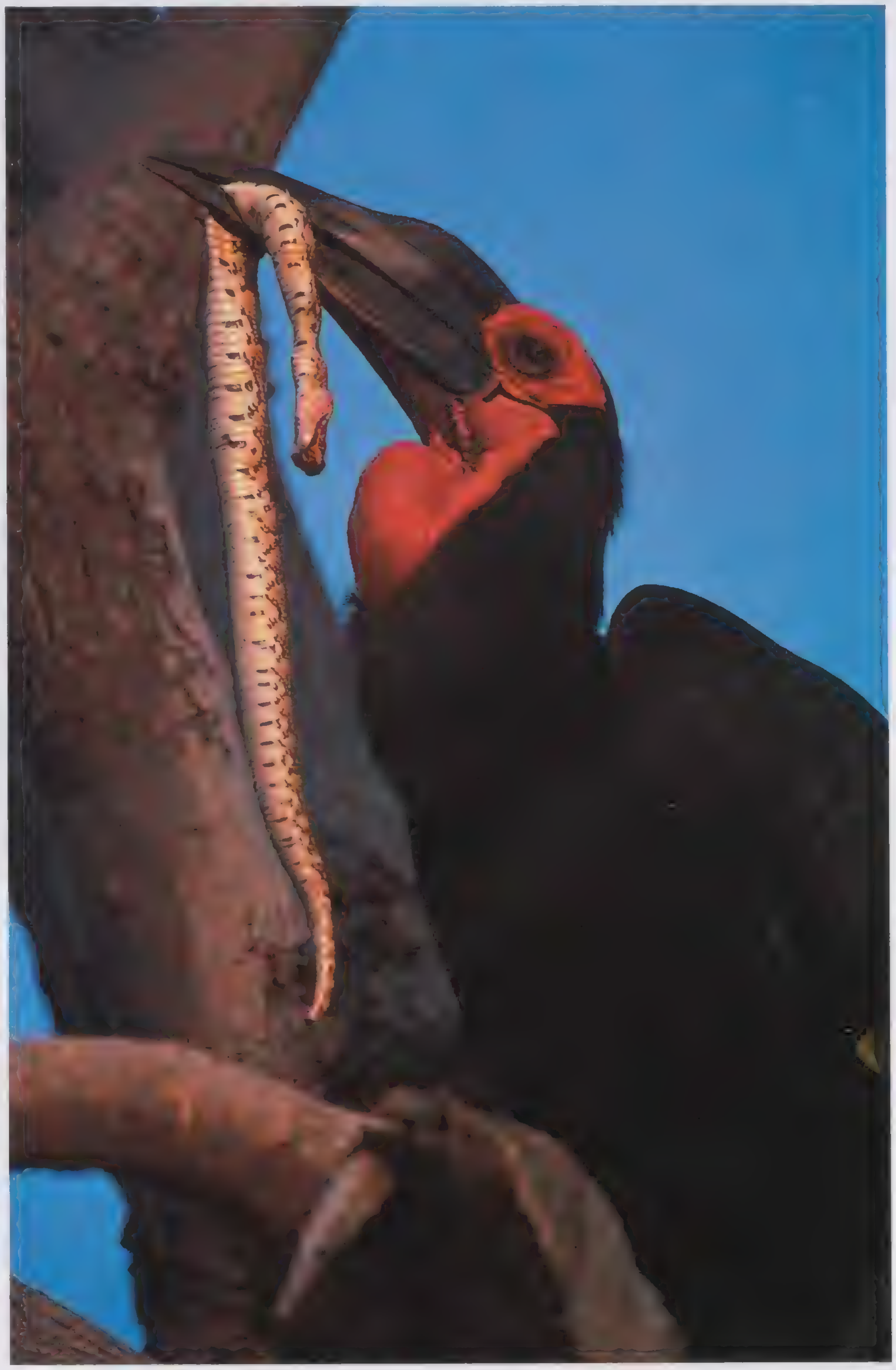
Newcomers are still arriving in large numbers. They will have to find their own new site in the bank, already densely covered with active tunnels. When the birds rise abruptly in a whirling cloud of iridescent reds and blues as a Yellow-billed Kite flies overhead, the sight is one of overwhelming splendor.

From Shakawe two days of travel in our old Land Rover take us to the Moremi Game Reserve in the eastern Okavango Delta. Unlike the heart of the Delta, with its expanses of permanent water, this area is now in the grip of the dry season. Channels, lagoons, and ponds shrink daily, and the water level in the wetlands is dropping. In the dry forest, trees are shedding their leaves. The heat is almost unbearable, with temperatures often exceeding 40° Celsius (104° Fahrenheit) in the shade. From the surrounding harsh, arid countryside, huge numbers of animals gather at the remaining waterholes and channels. Each pool is a life-giving oasis in an otherwise parched environment.

This is the peak season for bird watching. Spread out over vast sheets of water in the wet season, birds now congregate at the pools and ponds to drink and feed. Because the birds are most active in the early morning cool just after sunrise, we set out at dawn from Xakanaxa Campground and soon behold a scene of outstanding beauty. In the first slanted rays of sunlight, dozens of birds of various species bustle about in a shallow lagoon, each intent on catching a morning meal. A Great Egret, his backlit outline a golden glow, stands perfectly still with its head stretched forward, watching for prey. Several African Spoonbills wade back and forth, their clattering bills sweeping from side to side as they hectically probe the water and mud for food. Two immature Yellow-billed Storks immerse their open bills while stirring up the water with one foot, disturbing prey that they then catch with their bills by feel. A Long-tailed Cormorant dives for its breakfast, while a rare Slaty Egret walks quickly about, stirring up the water with its feet and darting after its prey. Other birds foraging here this morning are Little Egrets, Sacred and Glossy ibises, Black-winged Stilts, Hamerkops, and a pair of Marabou Storks, which just landed in the dew-covered meadow around the pond. Meanwhile a Pied Kingfisher hovers overhead, hurls himself into the depths of the water, and reappears with a tiny fish, which he consumes on his favorite perch nearby.

On our way to the more sizable hippo pool east of Xakanaxa, a pride of five female lions with four half-grown cubs crosses right in front of us on the way to their morning drink. Herds of zebras, impalas, and wildebeests leave the vicinity of the sandy track as we approach. They are all drawn to the meandering course of the narrow Kwai River. At the hippo pool, we immediately spot our new friend—a strikingly beautiful male Saddle-billed Stork that we have seen here for several days. Early each morning he patrols his territory along the pool's shallow edges, studded with aquatic plants. These storks are usually shy, but this one lets us approach within a few meters in our vehicle. As

A Yellow-billed Stork (facing page) looks elegant even while preening its feathers. Below, a Southern Ground Hornbill grips a snake firmly in its bill at Botswana's Moremi Game Reserve.



he walks slowly along the shore, he repeatedly jabs his bill into the water, sometimes coming up with a frog or a glistening fish. He tosses his victims into the air, catches them with his bill, and quickly gulps them down.

At Xakanaxa, a boat ride takes us through a watery world of narrow channels amid floating reed and papyrus beds to one of the Delta's heronries, on an island of dense water figs in the deep blue of an open lagoon. Shortly before sunset, birds fly in from everywhere, returning to their nests and roosts from foraging sites farther away. The sight of the soaring birds, illuminated by the setting sun, is stunning. Colorful chaos reigns as Yellow-billed Storks, Purple Herons, Sacred Ibises, Little and Great egrets, Slaty Egrets, and other species fly in and land at their respective sites. The nests are difficult to see from water level, but we are fortunate to get a peek at two Marabou Stork chicks being fed by a devoted parent.

In the late afternoon, when the forbidding heat lets up somewhat, we explore the lower reaches of the Kwai River before it eventually disappears in the sand. Hundreds of birds of prey flock to this area. Behind a curve, several dozen White-backed Vultures group together on the ground, while nearby clownish Bateleurs waddle to the shore for a drink or perch on the trees lining the river, often in the vicinity

Predators and prey: at left, an African Fish-Eagle with a fish; at right, a Saddle-billed Stork with a frog. These storks are normally shy, but the one above allowed the author and the photographer to approach closely in their Land Rover for several days.

HOW TO GET THERE

The Okavango Delta is located in northwestern Botswana. The Panhandle extends toward the Namibian border to the northwest. Best access to the Delta and the Moremi Game Reserve is via the town of Maun at the southeastern fringes of the Delta. Maun is accessible by road from Namibia via the border crossings at Mohembo and Mamuno as well as from Nata and Kasane in Botswana. But many visitors use Maun as a starting point after arriving by air. The Delta area including Moremi has about 40 private camps to choose from as well as government campgrounds for independent travelers. Most of the private lodges have air access, and all transport by air, road, or boat is usually arranged through the lodge. A number of lodges and the campgrounds can be reached by road (four-wheel-drive vehicles are necessary). Campground spaces should be reserved in advance through Parks and Reserves Reservations, P.O. Box 20364, Boseja, Maun; telephone: (267) 66-1265, fax: (267) 66-1264. The Panhandle area has a number of private camps, some of which have campgrounds for individual travelers.

of Tawny Eagles. Close to the vultures, carrion-eating Marabou Storks assemble in a cluster of 10 or 15, each balanced on one chalk-white leg, vividly reminding us of preachers with their dark-and-white plumage, their bowed heads, and their wise, almost philosophical-looking gaze.

Early in the evening we pass a pair of endangered Wattled Cranes, strutting gracefully through the narrow fringe of green grass along the river, and we watch an unusually relaxed Grey Heron fishing in the river. Instead of waiting for fish to appear by chance, this exquisite bird takes up position near an elephant herd, romping around in the water after a day of scorching heat and thirst. By stirring up the river, the elephants unwittingly chase fish toward the heron, which plucks out one silvery fish after another in the warm light just before sunset. On the way back to camp, an African Fish-Eagle swoops down from its high perch into the river, catching a wiggling creature with its awesome talons. Through our binoculars we identify the prey as a young crocodile, which the eagle carries to a nearby tree and eats. Although we have often seen kites kill doves and have even watched a Bateleur chase a Helmeted Guineafowl on foot into the bushes, we had never seen a bird of prey snatch a young crocodile from the water.

In the Okavango, it is not just the multitude of magnificent birds that keeps us forever fascinated. It is those splendid opportunities at the height of the dry season to observe wildlife closely and learn about the behavioral peculiarities of even the rare and endangered species that make these prolific wetlands a paradise for naturalists. If you have sufficient time and patience, a visit to the Okavango will be one of your most memorable and exciting birding experiences. ■

BEST TIME TO TRAVEL

August to November is an excellent time for bird watching, because many species can be seen near the remaining permanent sources of water, especially in the outer Delta and Moremi Game Reserve. A visit during the height of the dry season also affords spectacular game viewing. During the wet season, from the end of November to February, many migrant birds visit the Delta, but accessibility, especially for individual travelers, is restricted due to flooding. Tours booked through a private lodge are the obvious choice at this time of the year, although some camps are closed during the wettest months. Heat and humidity are intense during the wet season.

Sabine Allofs lives in the Yukon with her husband, Theo Allofs, a renowned wildlife photographer. Visit his web site at <www.theoallofs.com>.

A pair of endangered Wattled Cranes (facing page) strode past near the author one evening along the Kwai River. Below, a Squacco Heron stands in vegetation at the wetlands' edge.

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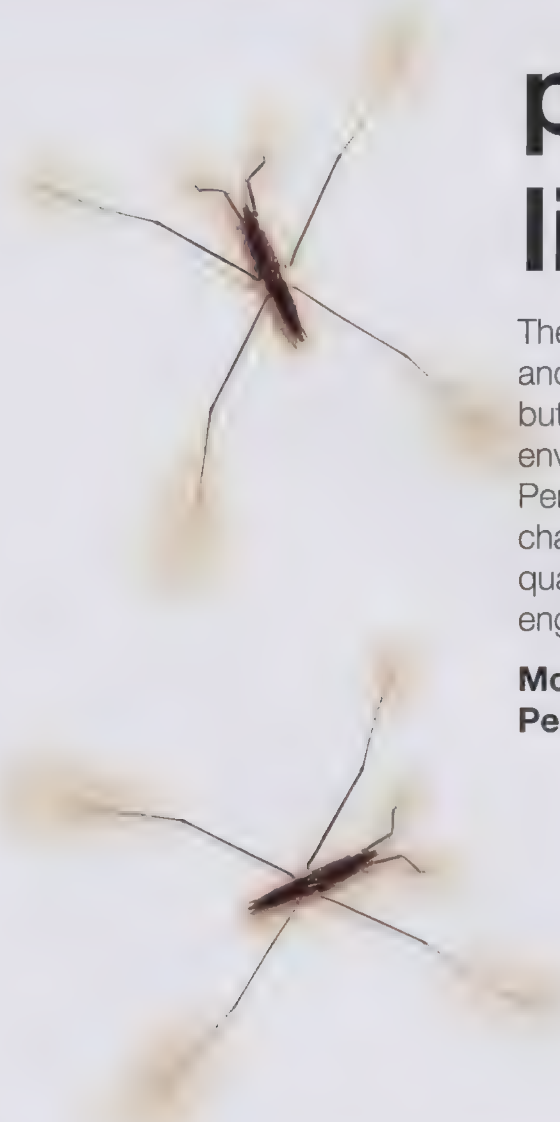

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WILL EL TRIUNFO ENDURE?

BY KRISTI G. STREIFFERT

Mexico's premier biosphere reserve faces threats and challenges from all sides

Carrying hope and fear and a liter of water, I started hiking up the steep trail to El Triunfo Biosphere Reserve. I wanted to reach the reserve's research station before dark, but I feared I wouldn't. Although I know that visiting tropical habitats isn't quite the arduous, snake-and-poison-plant-ridden adventure early writers made it out to be, I was still afraid that if I stopped to rest, I'd end up sitting on a deadly fer-de-lance, Central America's most feared viper.

The El Triunfo Reserve (facing page) has some of the least disturbed cloud forest habitat in all of Mexico and Central America. The Resplendent Quetzal (below) is the most spectacular bird nesting at the reserve.

LEFT: TOM STREIFFERT. RIGHT: MICHAEL AND PATRICIA FOGDEN/MINDEN PICTURES

El Triunfo Biosphere Reserve, which includes Mexico's best remaining cloud-forest habitat, is managed and supported by numerous groups and individuals. As one of the largest and least disturbed cloud forests in Central America, it towers in the ranks of biosphere reserves, and yet every day it faces the danger of being eaten away, bit by bit—through a lack of funding, local poverty, the growth of the surrounding communities, and the all-too-slow evolution of a conservation ethic in the Mexican people and their neighbors to the south.

The protected area at El Triunfo encompasses a bit more than 60,000

The research station (above) serves as a base camp for visitors. Getting there involves hiking for six hours on a trail that ascends 2,500 feet in elevation.

acres, with a buffer zone of an additional 240,000 acres. On the reserve map, much of the core area shows up as green blocks along the rugged mountain range separating the Pacific Coast from the central valley of Chiapas (Mexico's southernmost state and neighbor to Guatemala). On a hike, these blocks show their true identity: high-elevation rainforests, swirling with cool clouds, dripping with 100 percent humidity, and home to epiphytic orchids, bromeliads, ferns, and mosses. The forest is "tall, dense, and dark," as one botanical report put it, and dominated by oaks. Birders come here hoping to catch sight of two rare cloud-forest specialties: the Resplendent Quetzal and the Horned Guan. The subspecies of Resplendent Quetzal at El Triunfo (*Pharomachrus mocinno mocinno*) has particularly long tail feathers—almost 3 feet in length compared with about 2 feet in the quetzals of Costa Rica and Panama.

During my climb, which began at a coffee plantation at 3,280 feet and ascended some 2,500 feet in elevation, I found that cloud forest isn't the only valuable habitat within El Triunfo's boundaries. Depending on the elevation, visitors may find themselves in evergreen tropical humid forest, mountain rainforest, tropical deciduous rainforest, or pine-oak forest. The rugged mountains in this part of Chiapas mark a transition zone between the Nearctic and Neotropical regions, and the area's flora and fauna represent the northernmost and southernmost ranges of many species. In addition, some biologists call these mountains a "Pleistocene Refuge," home to species that survived the climate changes and extinctions of the last ice age.

It was in the cloud forest proper—and about six hours after I started hiking—that one of my fears proved justified: I was hiking in the dark. I finally stumbled into the welcoming lights of the research station, which serves as base camp for visitors, after about an hour, exhausted but marveling at the fact that I had the unique experience of traversing tropical cloud-forest trails at night. The mule-packers had already arrived with my gear and had a fire started in the cookhouse, the solar battery-powered lights on, and tea water boiling.

The next morning found me crouched back along the same trail with Raphael Solis Galvez, a reserve ranger. He was motioning me forward to spy a rare bird involved in a seldom-seen ritual—a dust bath. El Triunfo is probably best known for its concentration of Horned Guans, a large Neotropical gamebird restricted to isolated cloud forests in Chiapas and adjacent Guatemala. The Horned Guan is usually spotted in trees, but this female (Galvez could distinguish the bird's gender by her vocalizations) took a daily dust bath in the trail.

Seemingly oblivious to our presence, she flew toward us and landed at eye-level in a nearby tree. This bird was the oddest-looking thing I've ever seen: a glossy black "tree-turkey" (my term), with a lipstick-red horn about 3 inches long growing from her head, perpendicular to her bill.

Horned Guans have not always been this easy to observe in El Triunfo, according to Victor Emanuel, who has been offering guided birding trips to the area for 27 years. His unique status as a consistent visitor and worldwide birder offers an unparalleled perspective on the status of El Triunfo. "I made my first trip here in 1977, and I remember on one of the early trips finding a pile of Horned Guan feathers beside the trail, obviously poached. We didn't find any Horned Guans at all that year. But over the years, as the protection of El Triunfo has increased, we've seen the guans increase."

El Triunfo was first protected as a Chiapas state park in 1972, when this area of Mexico was still somewhat terra incognita. Miguel Álvarez del Toro, one of Mexico's conservation heroes, founded the state natural history institute and pushed for the creation of a reserve at El Triunfo and several other valuable areas in Chiapas. "At first the protection consisted of just one ranger going up and checking on the forest once a month and reporting to Don Miguel," says Emanuel. But gradually, what is now the field station and camping area of the reserve was cleared of squatters, who were grazing their cattle on the rare plants and clearing more and more of the forest to plant crops. The reserve established a permit system for visitors.

But there have been many setbacks along the way. The reserve area was practically abandoned by the government in the early 1980s, and during one of his tours Emanuel found that the rangers hadn't been paid for several months. The World Wildlife Fund helped resurrect the reserve's conservation efforts in 1986, and The Nature Conservancy and others later provided further help.

TOM STREIFFERT (3)

In 1990, Mexico's federal government formally established El Triunfo Biosphere Reserve. In a region where government agencies are easily distracted by other pressing concerns and where wise management plans are often delayed by crises-in-waiting, this preserve and others like it have been sustained by de facto teams made up of international conservation organizations and federal and state governments. For El Triunfo, this list includes Mexico's National Ecology Institute (a federal agency), Institute of Natural History and Ecology (State of Chiapas), The Nature Conservancy, World Wildlife Fund, National Fish and Wildlife Foun-

Raphael Solis Galvez (above left) is a reserve ranger at El Triunfo. Here he points out some of the local specialties to a visiting birder. Mules are used to carry visitors' packs and other gear to the research station.

dation, Conservation International, MacArthur Foundation, International Development Center, RARE Center for Tropical Conservation, World Bank, Mexican Fund for Nature Conservation, and others.

One significant milestone in the history of the reserve was its 1993 designation as a "UNESCO Man and the Biosphere" site. (This program launched the concept of biosphere reserves in 1976 and now includes more than 400 reserves in 92 countries.) The importance of integrating humans into El Triunfo's plan becomes evident when you realize that the buffer zone area of the reserve is home to some 221 settlements and a growing population of more than 14,000 people, plus a floating population that migrates from Guatemala to work on the area's many coffee farms.

TOM STREIFFERT

Shade-grown coffee (above) is one environmentally friendly crop being grown in the El Triunfo area. Coffee plantations that use this technique actually provide habitat that compares favorably with natural forest. The Resplendent Quetzal (facing page) has been a mythic figure for centuries to the people of Mesoamerica and is an appropriate symbol of El Triunfo.

Before it was colonized by Europeans, this area was dominated by the Maya, but centuries of immigration, along with the construction of railroads and highways, have changed the culture and traditional lifestyle. Cocoa production, fishing, and small-scale agriculture have been replaced by coffee cultivation, shate palm harvesting, trade, construction, and cattle ranching. The demands of a growing human population now threaten the ecosystems at El Triunfo. More and more deforestation takes place each year as land is cleared for agriculture and woodlands are devastated by forest fires.

"While the protection in the core areas of the reserve has obviously been effective, other changes have not been so positive," says Emanuel. "During the early years, we approached El Triunfo from the Pacific side, and it took us a day of walking through forest to get to our first camp, in a coffee-processing area called Paval. Now all that forest and most of the entire river valley has been cleared for agriculture. In 1978, I remember being surrounded by forest and we saw a flock of 300 Orange-fronted Parakeets at Paval. This year, we only saw eight."

This illustrates well the contradiction that is El Triunfo's buffer zone—an area that is something of an ongoing experiment. Somehow a balance must be found between habitat protection and development intended to benefit the local people affected by the creation of the conservation area. As Terry Rich, the U.S. national coordinator for Partners in Flight, points out, this experiment cannot yet be deemed successful. "It scares me to see new villages eating away at the edges. This will be the doom of all forests in the tropics if we are not smart and very diligent." To him, being smart and diligent means providing local people with a reason to protect the area.

Many scientists, however, view buffer zones for reserves as existing solely to protect the core zone, and they raise a pointed question: "If a development project becomes successful, won't it attract people to the area and thus endanger the reserve?"

Reserve managers and planners counter that conservation cannot be imposed on local populations with guns and fences. "In the United States and Canada, we have a culture of conservation, and wealth, and law enforcement," says Rich. "Most of Latin America does not have these three key pieces."

The communities surrounding El Triunfo are currently benefiting from a variety of projects, such as the production of shade-grown coffee, which is being promoted by Conservation International and other groups. Shaded coffee plantations actually compare favorably with natural forest as habitat for many birds. "This is a great model because it gives the local people good reasons to care about the forest," says Rich. "We have to make it work there and export the experience elsewhere."

Laying the foundation for a conservation ethic is important, too—and the reserve management is accomplishing this with help from the RARE Center for Tropical Conservation, which has sponsored an education campaign for reserve residents. The campaign will be part of a lengthy process to communicate basic information to the isolated villagers, such as what the reserve is and who owns it.

The reserve's administration chose the quetzal as a symbol, tool, and incentive. The cloud forest also harbors endangered tapirs, jaguars, orchids, and many other species, but the Resplendent Quetzal has for centuries been a source of pride and a mythic figure to the residents of Mesoamerica; Aztec royalty wore quetzal plumes in their headdresses.

I thought I saw a quetzal when I was alone in a clearing near the research station at El Triunfo. High above and over my shoulder, I glimpsed what looked like an iridescent turquoise cloth waving. I turned instantly and saw . . . nothing. Did I imagine a quetzal? It had to be real, but the encounter was so brief that I felt like I'd sensed the spirit of quetzal instead of the physical animal.

Galvez wasn't satisfied when I told him of

MICHAEL AND PATRICIA FOGDEN/MINDEN PICTURES

TOM STREIFFERT

VISITING EL TRIUNFO

El Triunfo's tourism permit system should be a model for other reserves, says Jorge Uribe, who manages the program. "It is the only reserve in Mexico set up to receive financial benefits directly from each visitor." That's the good news. But El Triunfo receives very few visitors—less than 100 during some years. One reason for the low numbers is El Triunfo's isolation. Visitors must be physically fit and ready to camp. The other reason is that the State of Chiapas has a history of civil unrest. "People need to understand that the sporadic problems in Chiapas are many miles from El Triunfo," says Uribe. "Prospective visitors shouldn't consider the entire state to be problematic." (Of course, as with any international travel, a trip to Chiapas requires visitors to be alert to the possibility of dangerous situations.)

Most birders travel with one of several birding tour companies that offer trips each year, usually in the spring during the quetzal and Horned Guan breeding season. Others travel with Emerald Planet (www.emerald-planet.com), an adventure touring company focusing on conservation trips throughout Latin America.

The trip starts when you arrive at the airport in the capital city of Chiapas and then take a three- or four-hour highway drive to the gateway town of Jaltenango. The next morning, travelers continue with two to three hours of rough driving on a four-wheel-drive-only road and then a nine-mile hike, which includes a 2,500-foot-elevation climb. Mules carry travelers' food and gear during the hike, allowing birders to concentrate on honeycreepers and motmots. At the research station and camp, high in the cloud forest, a rustic bunkhouse and cooking hut provide "luxuries" for the first few nights, followed, usually, by a few additional days of tent camping on the hike across the continental divide to the Pacific slope. This section of the trip allows birders to see, among other species, the Azure-Rumped Tanager, an endemic that was little-known to ornithologists until recent years.

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the mystical moment, and he suggested we head out along the Palo Gordo trail to some wild avocado trees. We walked for about an hour, stopping expectantly at several sites until finally we waited directly underneath a very tall tree. I picked up a small avocado that had dropped from the tree and marveled at the miniature version of what I put on sandwiches at home.

About 30 minutes into our wait, Galvez spotted a female quetzal flying toward us, and I knew immediately that I had not imagined my first quetzal encounter. Who could imagine that shade of green? Then a male landed

MICHAEL AND PATRICIA FOGDEN/MINDEN PICTURES

in a tree on the other side of a small stream. He sported the long tail plumes that have entranced humans for centuries. For this pair, the breeding season (which lasts from March through June) was just beginning. I thought about the chances for their success. Studies have shown that nest depredation is high; their nesting success rate averages only 20 percent. Earlier I had admired the Emerald Toucanets and squirrels that animate the forest canopy, but considering that these are the quetzal's main nest predators, my feelings for them changed—but only a little. Habitat destruction is the quetzals' biggest threat, and that is why the education program, using the Resplendent Quetzal as mascot and logo, with videos, radio spots, bumper stickers, and hundreds of school visits, is such an important beginning.

Sure, educating the people and continuing to provide sustainable alternatives to communities in the buffer zones are important, says Hector Gomez de Silva Garza, an ornithologist at Mexico's National University. But he also points out the undeniable crux of El Triunfo's problem. "In the long run, reducing or reversing population growth (however that may be achieved) is the only action that will benefit this and any other area," he says.

For now, reserve managers are teaching local cattle ranchers ecologically sound pasture management. Another project offers lessons in the sustainable harvest of the shate palm, a native plant that is a major floral export. And coffee growers are joining an international organic certification alliance. Now, nearly 30,000 acres within the reserve are dedicated to certified organic coffee production that allows coffee to be grown so that it benefits the habitat instead of damaging it.

Holding these hopeful measures in the same mental framework as dread and worry for the future of El Triunfo and other threatened reserves is a challenge. But a swiftly expanding international conservation ethic—of which bird-oriented programs are among the most promising examples—combined with the creative hard work of many Mexican and foreign conservationists offer a glimmer of hope. Like the trail up to El Triunfo, the process of protecting the reserve is a struggle, but it is clearly well worth the effort. ■

Kristi Streiffert is a freelance author who frequently writes for this magazine. She lived in Chiapas, Mexico, when she wrote this article and will soon be heading to Nicaragua for a two-year stay.

Although the Emerald Toucanet is beautiful, it is one of the Resplendent Quetzal's main nest predators. But the negative effects of its depredations are miniscule compared with that of the habitat destruction caused by humans.

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LONE STAR HUMMERS

BY GARY CLARK

PHOTOGRAPHS BY KATHY ADAMS CLARK

Texas boasts more hummingbird species in winter than any other state

Birders who live along the southeast Texas Gulf Coast have known for years that western hummingbirds winter in our neighborhoods. In hopes of attracting one of these western pixies, we keep hummingbird feeders out during our relatively mild winters. From Beaumont to Houston to Corpus Christi, many of us get Black-chinned and Rufous hummingbirds every winter. And someone always has an Allen's, a Broad-tailed, or even a Calliope hummingbird. The legendary Freeport Christmas Bird Count (CBC), which often places among the top two or three counts in the United States in number of species, normally tallies seven hummingbird species, and at least four of them are western species such as Anna's, Black-chinned, Broad-tailed, and Rufous.

According to Tom Collins, co-compiler of the count, the western hummingbirds have made the difference for the Freeport CBC being in the top two counts in the nation. "We always expect to tally four to five western hummer species," he says.

Sherry Collins, Tom's wife, who leads the "Hummingbird Patrol" on the Freeport count, says, "When I began doing the Freeport Christmas Bird Count in 1974, any hummingbird was a rarity. Field guides indicated no species other than the Ruby-throated Hummingbird showing up in our area. It was only when we began a concentrated effort to check on feeders hung in neighborhood yards that we realized the extent of western hummers in our area. In fact, the eastern Ruby-throated Hummingbird is often the most difficult hummer to find." Other Christmas Bird Counts along the Texas coast have had similar results, particularly the Mad Island Marsh Count south of Freeport, which has topped the nation in bird

tallies for the past five years and has averaged four western hummingbird species.

Clearly, hummer species breeding throughout the western states, including the western half of Texas, find winter homes east on the Texas Gulf Coast. The question is, are these hummingbirds merely a scattering of strays that wander too far east on their autumn migration toward Mexico? Or do they arrive regularly, year after year, to make a winter home on the Texas coast?

Brent Ortego, a biologist with the Texas Parks and Wildlife Department, is beginning to find answers to these questions. He and a group of volunteers have been banding wintering hummers since 1995 at his home in Raisin, Texas, 50 miles inland from the central Texas coast in Victoria County.

The results from his eight-year banding studies are astounding. He and his volunteer team have banded more than 3,000 hummingbirds representing 8 species, 6 of which are western birds. They've also recaptured 1,000 of these banded birds on the property, demonstrating a previously unknown level of winter site fidelity among hummingbirds. This means that western hummers are returning to the Texas coast year after year.

My wife, Kathy Adams Clark, and I visited Ortego's home one chilly February morning last year to observe the banding research and find out what this study has uncovered. The banding takes place on alternate weekends from November 1 through February 28.

Ortego's home sits on two acres along Coleto Creek, just southwest of the city of Victoria. The land is typical of the central Texas Coast, with large stands of live oaks and pecans, thickets of yaupon, grasslands with native nectar-producing flowers such as Turk's cap and coral bean, and tree-lined creeks that feed into the Guadalupe River.

According to Ortego, Victoria County is one of the last counties in coastal southeast Texas with large forested areas. "Perhaps hummingbirds moving from the West find the county's mild climate and woodlands attractive as wintering grounds," he says. "Also, our home in Raisin is located in the floodplain of Coleto Creek. Hummers tend to use creeks and rivers as migration routes, so they may be following the creek to find our property."

When Kathy and I pulled up at Ortego's house, we realized his property was a perfect spot for hummingbird research. It looked like a Texas coastal version of eastern Arizona's

Many hummingbirds choose to winter on the Gulf Coast of Texas rather than migrating farther south. Above, an Anna's Hummingbird hovers at a feeder in Houston in February. A researcher carefully removes a hummingbird from a mist net at Brent Ortego's banding station (far left). Since 1995, Ortego and his team of volunteers have banded more than 3,000 winter hummingbirds.

Craig Zalk (at right) gently holds a fresh-trapped hummingbird. The birds are so small that Zalk has to use a magnifying headpiece when he's installing the tiny bands. Above, a newly banded hummingbird gets a drink from the feeder before being released.

Ramsey Canyon, but a winter rather than a summer resort for hummers. Nectar-producers such as shrimp plants, Turk's cap, and red sage blanket the yard. In the mild winter climate of Victoria County, a prolonged plant-killing winter freeze is unlikely. But the hummingbirds don't need to depend on natural nectar sources to survive here: Ortego and his wife, Sue, maintain 70 feeders spread around the property.

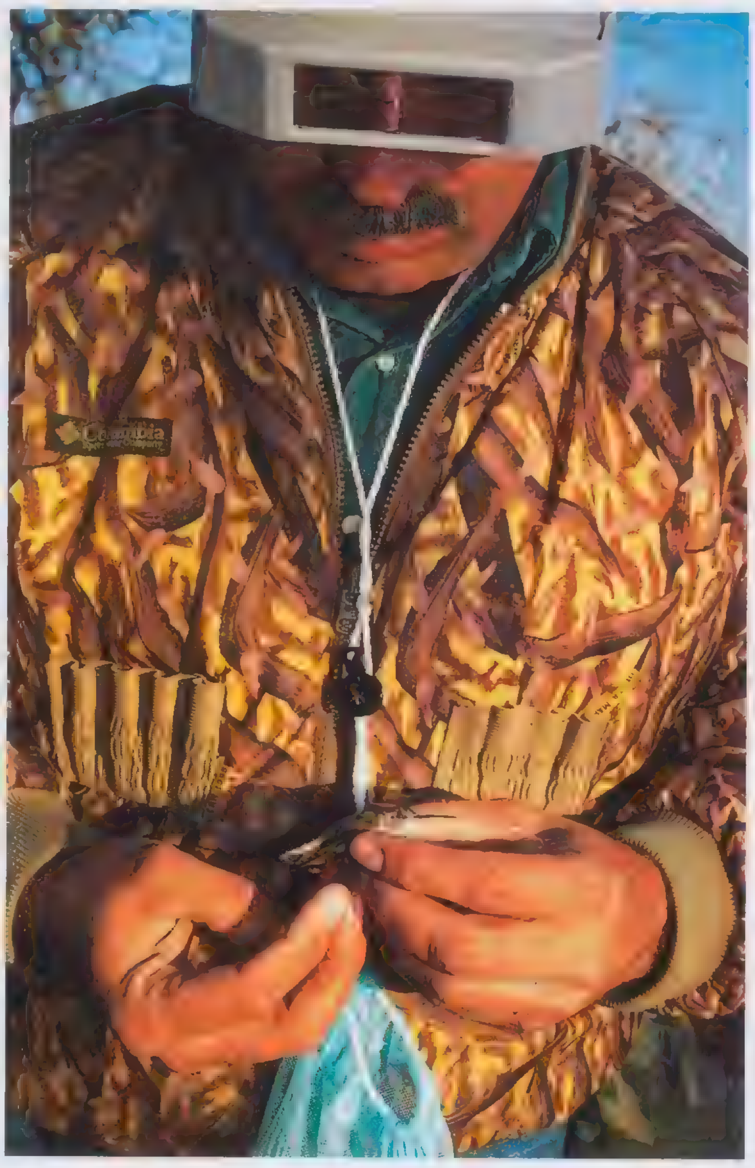
Pecan and live oak trees create a parklike scene in the yard, which is bordered by dense stands of evergreen and deciduous shrubs twined with mustang grape vines. A thick stand of willows lines a pond bordering the backyard. Vacant lots with live oaks and dense shrubs surround the east, south, and west sides of the yard. To the north are other properties with live oak and pecan trees, and, more importantly, hummingbird feeders.

Ortego says that wintering hummingbirds prefer to feed along the edges of woodlands and thickets, so his property is ideal for them. He calls his yard a mega-feeding station because of the abundance of sugar-water feeders. To minimize feeding competition among the hummers, he positions feeders at five-yard intervals along the woodland edges. Most hang on exposed branches or under the eaves of his house, but he also nestles feeders in the shrubbery to accommodate the more timid birds.

Although seeing a bunch of hummers was a sheer delight, that wasn't the reason Kathy and I visited Ortego's home. We wanted to see his hummingbird banding research in action.

Craig Zalk was the first volunteer to greet us. He's a certified public accountant who lives in Houston and works as a legal administrator for a law firm. He was as meticulous in his study of hummers as he must of necessity be in his profession. Recently, he purchased two vacant lots adjacent to Ortego's property to maintain adequate space for wintering hummers. He was preparing to band an Allen's Hummingbird, a species that breeds on the Pacific Coast of California and southern Oregon. The bird is rarely seen (or correctly identified!) on the Texas Coast, but as the banding research indicates, it may actually be a regular winter visitor here.

Zalk reminded us that distinguishing a rare wintering Allen's from the more common Rufous hummingbird—the species' breeding ranges overlap in Oregon—requires careful scrutiny. He held the bird gently and spread out its tail feathers, and peered at them



through the magnifying lenses that dropped down in front of his eyes from a headpiece called an optivisor. The magnified view also aided Zalk when he attached a tiny, lightweight band to the hummingbird's ultra-thin leg.

Banding hummingbirds requires a different set of skills from banding songbirds, as well as different state and federal licenses. Ortego, a licensed songbird bander, trained himself to band hummers and improved his skill by participating in the national Hummingbird Banding Working Group. He then trained volunteers such as Zalk and Glenn Swartz from Corpus Christi and Charlie Brower from West Columbia.

The three volunteers and other assistants were busily retrieving hummingbirds from the 25 mist nets on the property. The mist nets, made of fine nylon mesh, were hung between metal poles like flimsy, oversized badminton nets. No harm came to the hummers as they flew into the nets, and the bird banders were diligent and gentle in removing them.

Zalk showed us birds other than hummers, such as Northern Cardinals and White-throated Sparrows, that had flown into the nets. A cardinal that Zalk had ever so gently removed from a net clamped its bill firmly into the fleshy base of Zalk's thumb, as if to express its annoyance at being interrupted in the pursuit of food on a cold morning.

But the true gems that Zalk and the other banders pulled from the nets were the hummingbirds. They found an amazing variety of hummers, recording five species by the end of the banding period at 11:00 A.M.

Black-chinned, Buff-bellied, and Rufous hummingbirds were the most common; then there were the Allen's and at least one broad-tailed. Three of these birds breed in Texas: black-chins breed in the western half of the state, broad-tails in the southwest Trans-Pecos region, and buff-bellies (tropical Mexican birds) in the lower Rio Grande Valley.

Kathy and I have enjoyed hummingbirds for years through binoculars. But holding them in our hands at Ortego's property to examine their intricate feather patterns and iridescent hues up close added a profound dimension to our appreciation.

We did not hold any Ruby-throated Hummingbirds in our hands because none were around. That seemed surprising, because the Texas coast is renowned for its concentrations of migratory ruby-throats in the fall—goodness, Texans even have autumn hummingbird festivals to celebrate them. Didn't at least some of the birds stick around for the winter?

Not really. As Ortego's banding research shows, few Ruby-throated Hummingbirds overwinter in Texas. Observers who think they're seeing a wintering ruby-throated at a backyard feeder are more likely to be seeing a wintering black-chinned.

"During our eight-year banding research, we've caught 18 ruby-throats versus 36 black-chins and have only had returns on the black-chins," Ortego says. "We suspect all the ruby-throats perished. I can't say for sure why ruby-throats don't overwinter in Texas, but maybe they

Many of the hummingbirds seen wintering in Texas are western species, such as the Black-chinned Hummingbird (above). Six of the eight species banded at Ortego's station in winter have been western hummingbirds.

don't have the ability to go into deep torpor as an energy-saving mechanism on cold nights." The next day at my office, a colleague told me she had a Ruby-throated Hummingbird at her feeder. Boy, did I have news for her!

But the big news was Ortego's research, which indicates, for example, that the breeding range of Buff-bellied Hummingbirds extends much farther north into Texas from the lower Rio Grande Valley than previously thought. The green-and-buff-colored hummers are probably common breeders in the oak mottes and riparian zones on the central Texas coast. (Nancy Newfield, the famed Louisiana hummingbird researcher, has long since documented the presence of wintering buff-bellies along Louisiana's Gulf Coast.)

Data on western hummingbirds are even more intriguing. Six western hummingbird species winter regularly on the southeast Texas coast, although perhaps not in large numbers except for Black-chinned and Rufous hummingbirds. Charlie Brower, one of Ortego's hummingbird banders, told us, "In the winter of 2001–2002, I captured 93 western hummers on the central coast away from Ortego's property. So far this winter, I have captured 40 western hummers, several of them banded last year at the same feeders where I captured them this year."

On February 22 and 23, 2003, a team of birders led by Jim Hinson conducted a hummingbird survey at 19 locations in Houston (136 miles north of Ortego's home and 50 miles inland from the coast). They counted 46 wintering hummers. Hinson told us that more than half of the locations, which included residences and parks, had two or more hummers.

For more than 10 years, Bob and Martha Sargent's Hummer/Bird Study Group has conducted banding studies documenting at least nine western hummingbirds wintering in the eastern United States. But those studies do not include data for wintering hummers in Texas.

So, when Kathy and I left Ortego's home, we were happy about Ortego and his group of volunteers breaking new ground in hummingbird research. Ultimately, that research will tell a new story about the winter distribution of western hummingbirds in Texas. And range maps will definitely have to change.

In the Gulf Coast Bird Observatory's fall 2000 newsletter, *Gulf Crossings*, Sherry Collins discussed the increasing awareness of wintering western and tropical hummers on the southeast Texas coast. In her story, "From Gray Skies Come Rainbows," she writes, "Hummingbirds are especially intriguing and colorful characters of the bird world, and it has been with much interest and delight that observant residents of the Texas Gulf Coast have documented more wintering hummer species than had ever been thought possible." ■

Gary Clark writes the "Wonders of Nature" column in the Houston Chronicle *and is a dean at North Harris College. Kathy Adams Clark is a nature photographer and workshop teacher. Visit her web site at <www.kathyadamsclark.com>.*

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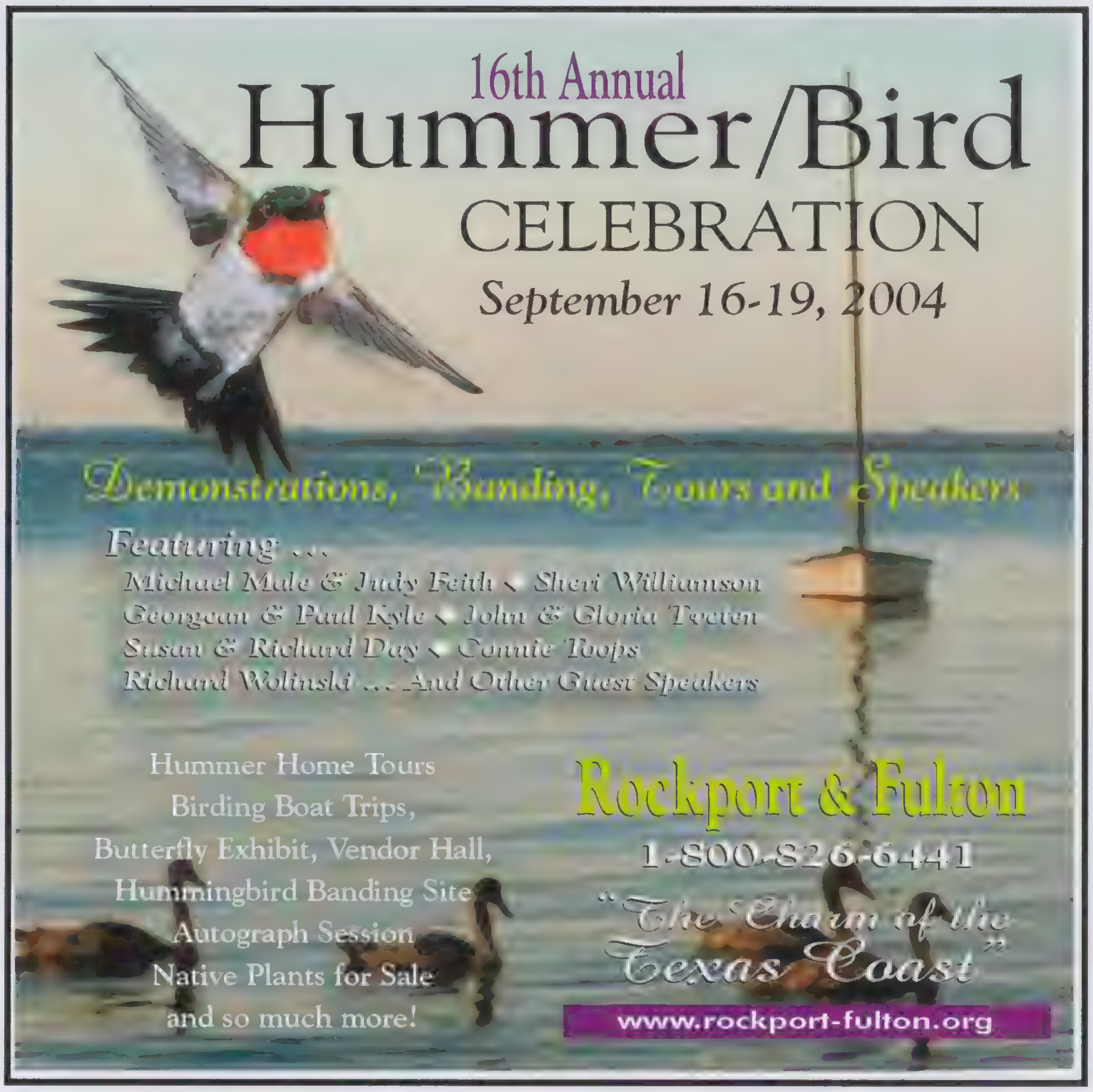

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THE UNWOODPECKER

by Jack Connor

Why flickers must be nonconformists—like everyone else

If flickers are among your favorite woodpeckers, I'm willing to bet that you are also charmed by other oddballs: Ospreys, Yellow-breasted Chats, Great Kiskadees, Burrowing Owls, Cattle Egrets, Mountain Plovers, and Flightless Cormorants. Burrowing Owls feed by day, live in colonies, and nest underground in very un-owl-like ways; kiskadee flycatchers spend much less time catching flies than they do capturing berries, frogs, lizards, and fish; Cattle Egrets spend much more time pursuing insects than they do the fish and frogs chased by most herons and egrets. Each of these species seems to stretch the mold that shaped it.

At first glance, the flicker might be mistaken for a generic woodpecker: the thick torso, the stiff tail feathers, the zygodactyl feet (two toes forward, two toes back), the undulating flight, the squawking calls. Also, like other woodpeckers, flickers hammer into wood to excavate their nesting cavities. They are less well adapted to drill in pursuit of prey, however, and that makes all the difference. Nearly all other North American woodpeckers (Pileated, Downy, Hairy, White-headed, Ladder-backed, Red-bellied, et al.) are non-migratory, permanent residents throughout their ranges. Equipped with bills and bodies that enable them to bore into wood to find larvae and other insect prey year-round, they have no need to move, no matter what the winter brings. The costs of migration outweigh the benefits. The balance sheet reads differently for Northern Flickers, however, and they migrate a long distance—farther than any other woodpecker except the Yellow-bellied Sapsucker, another obvious nonconformist.

Look closely at the next flicker you see and you'll note that its bill is more curved than other woodpeckers' (especially along the upper mandible) and ends in a sharp point. David Sibley's side-by-side painting of Northern Flicker and Pileated Woodpecker in *The Sibley Guide to Bird Life & Behavior* illustrates this difference nicely. The pileated owns a chisel; the flicker holds a knife. Sibley's text also notes that flickers have reduced nasal tufts, apparently because they need less protection from flying wood chips than more arboreal woodpeckers.

Flickers do not seize their prey with their sharp bills, as you might guess. Instead, they probe and poke that blade into soft surfaces: rotten stumps, leaf piles, and, most frequently, ant mounds. Other woodpeckers come to the ground hesitantly and leave it quickly. Flickers seem to prefer it. You can often find them in open fields, hopping from spot to spot, far from any trees. They frequently return to the same spots in a yard, day after day. Put your binoculars on one of those flickers on the ground at the same spot for the second or third day, and you will likely see its bill covered with ants—before the long, flashing-quick tongue flicks them off and into its mouth.

A. C. Bent in his *Life Histories of North American Birds* (1939) reports, "The flicker eats more ants than any other bird; ants were found in 524 of the 684 stomachs examined, and 98 stomachs contained no other food; one stomach contained over 5,000 ants, and two others held over 3,000 each."

Charles Darwin was so struck by the oddity of flicker behavior when he encountered the Campo Flicker (*Colaptes campestris*) on the grasslands of Argentina in 1833 that he used it as a key example in *The Origin of Species*, published 26 years later. New species, he argues, come into existence as populations vary and find new places in the economy of nature, niches unexploited by their closest relatives: "If any one being [can] vary ever so little, in habits or structure, and thus gain an advantage . . . it will seize on [that] place . . . however different it may be from its own place."

Some species live so differently from their relatives that they seem to have abandoned the behaviors that led their ancestors to success. "Can a more striking instance of adaptation be given than that of a woodpecker for climbing trees and seizing insects in the chinks of the bark? Yet in North America there are woodpeckers which feed largely on fruit, and others with elongated wings which chase insects on the wing. On the plains of La Plata, where hardly a tree grows, there is a woodpecker (*Colaptes campestris*) which has two toes before and two behind, a long pointed tongue, pointed tail-feathers . . . and a straight strong beak. The beak, however, is not so straight or so strong as in the typical woodpeckers, but it is strong enough to bore into wood. Hence this Colaptes in all the essential parts of its structure is a woodpecker. [In] the coloring, the harsh tone of the voice, and undulatory flight, its close blood-relationship to our common woodpecker is plainly declared; yet . . . in certain large districts it does not climb trees, and it makes its nest in holes in banks!"

According to Bent, our Northern Flicker also sometimes nests away from trees and has been recorded laying its eggs in haystacks, chimneys, brick walls, Bank Swallow and Belted Kingfisher burrows, and in one case, "far out in the prairie in an old wagon hub, surrounded by weeds." Our flicker eats fruit also, including hackberry, black cherry, poison ivy, and poison sumac.

But do the Campo Flicker or the Northern Flicker really qualify as oddball species?

Not any more (or less) than any other woodpeckers—or any other species of any other kind, for that matter.

According to Darwinian logic, every new species must differ from its ancestors and from its relatives. A truly generic woodpecker (or generic hawk or generic butterfly) could not exist. Species come into existence only by splitting away from their closest relatives and finding a niche that will enable survival against them. "The competition will generally be most severe . . . between those forms which are most like each other in all respects." Each species must stretch the mold that shaped it.

Look carefully enough at any species of woodpecker and you will find physical features and behavioral traits that make it different from all other members of its family. The long-winged, fly-catching woodpecker Darwin mentions above is the Lewis's, presumably, and several other North American woodpeckers (including Acorn, Red-bellied, and Red-headed) apparently depend on fruit for at least part of each year. The sapsuckers' foraging methods—drilling live trees to draw out their sap—distinguish them most obviously from other woodpeckers.

Look carefully enough at any species of bird in any family and you find similar, crucial distinctions that mark how the species differs from all of its relatives. Burrowing Owls, Great Kiskadees, Cattle Egrets, and flickers seem like oddballs only because their differences from their relatives are so obvious. All species must differ. "[In] the general economy of any land," Darwin writes, "the more widely and perfectly the animals and plants are diversified for different habits of life, so will a greater number of individuals be capable there of supporting themselves."

Darwin's idea has been refined and further developed in the last century and has come to be known as the Principle of Competitive Exclusion, or the Rule of Four Cs: Complete Competitors Cannot Coexist.

To give yourself an observational challenge the next time you're out in the field, you might try to determine how one of the common and apparently generic local species in your area manages to distinguish itself from all of its near relatives. How does the Downy Woodpecker find a niche unoccupied by the other local woodpeckers? How do the behaviors and adaptations of the Red-tailed Hawk enable it to distance itself from all other buteos? How about Herring Gull, American Crow, or Song Sparrow? According to the Principle of Competitive Exclusion, each of these species must have its own niche, different from all other species in its range.

The humorist James Thurber once asked in complaint, "Why do you have to be a nonconformist like everyone else?"

In the Darwinian world of nature the answer to Thurber is clear: "Otherwise, I would not exist.

Vive la differénce! ■

TOM VEZO

"Most woodpeckers come to the ground hesitantly and leave it quickly. Northern Flickers seem to prefer it. You can often find them in open fields, hopping from spot to spot, far from any trees."

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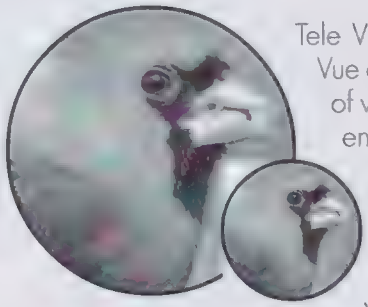

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IRRITATIONS

by Pete Dunne

Don't get me wrong. I love birding. But I can't say that this lifelong avocational love affair of mine is flawless or that tiny grains of irritation have not, on occasion, worked their way between the lids of my shell. What irritations?

Take, for example, the type-A birder standing with you on the rickety viewing platform who punctuates short bursts of scanning (for, let's say, a Mongolian Plover) with bouts of pacing—the foot-stomping kind that makes rickety platforms (and tripods) vibrate and distant images dance. Being type-A and impatient, they don't linger. In fact, they leave . . . just about the time that the heat waves start turning the ranks of distant shorebirds into gelatinous mush, making scanning even more futile than it was before.

Or how about the person in your birding party who waits until you are about an hour away from your last stop to ask whether anyone else happened to notice that "funny tern" flying around—the red-billed one that seemed to have a white string or something trailing behind it.

Or the birder who (in response to your question, "Is anything around?") proceeds to tell you about all the migrants that were here two days ago but "weren't seen yesterday."

Or the local birder offering directions to the migrant trap where all the birds were seen (two days ago), whose reference points are esoteric at best. "Okay, you go to the bridge where the Cave Swallow attempted to nest with the two Cliff Swallows two years ago. Know where that is?"

"No. I don't"

"That's okay. Then you take the turn to the reservoir where the Yellow-billed Loon was reported but not verified in 1965. You must know where that was."

"No. Actually, I don't get out to the Oklahoma Panhandle very often."

"That's okay. Then . . ."

Some of my irritations are closer to home. In fact, I'm embarrassed to admit, some are even part of my home life. I don't know what I did to bring this on, but my wife, Linda, has recently taken to faking birds. For no apparent reason, she'll stop and point and say, "Hear that?" And I'll say, "Hear what?" And she'll say a Blackpoll Warbler, a Ruby-crowned Kinglet, or some other bird name. You can just imagine how irritating this is.

It's almost as irritating as having some seven-year-old step onto the hawk-watch platform, look up into a pure blue birdless sky and say: "What's that bird?" Bringing your binoculars to bear, you find an American Kestrel in orbit around the international space station. "That's a kestrel," you say. And the kid screws up his face, shakes his head, and says: "Not that one, the big one above it."

And there's nothing there.

Sometimes I think that people who profess an interest in facilitating my birding are secretly working against me. Who invented the one-way refuge auto-tour route anyway? And why is it that mega-rarities always turn up at the midpoint after I have hurried past?

Who decided that great birding vantage points should always be blocked by an elaborate shack with narrow viewing slits—a structure aptly called a "blind," because that is how you feel when you're sitting in one? Did it ever occur to parks people, birding trail designers, and others with grant money to burn that birds will adapt to the presence of humans? As long as everyone stays on the trail or the open platform, birds will just go about their business. Yes, I know that blinds (or "hides") are big in Britain, but maybe their popularity there has less to do with any presumed sensitivity to disturbance on the part of birds and more to do with birders in a cold, wet climate needing someplace to get out of the rain.

I also get irritated when I check into a motel that offers a pool, sauna, wet bar, exercise room, Internet access, but not the Weather Channel. Or I get a loaner pair of binoculars and the focus wheel turns the wrong way. Or I go to log my sightings on the bird-sighting sheet and discover that someone reported a Snowy Owl right where that dead Snow Goose (that I didn't bother to scan) was lying on the ice. Or I learn that the perfectly identifiable Lesser Scaup that I pointed out to 50 other birders had (apparently) displaced a Greater Scaup reported an hour earlier by three guys so timid about their identification skills that they wrote only their initials: DS, KK, and JD.

And finally (and I know this is silly), why is it that birders habitually direct other birders to flying birds by telling them that the bird is moving "left to right" or "right to left." If the bird is heading left, it stands to reason that it is coming from the right. Right?

Right. ■

ILLUSTRATION BY JEFF SIPPLE

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LIVING BIRD

AUTUMN 2004 VOLUME 23 NUMBER 4

GREETINGS FROM SAPSUCKER WOODS

As I looked at the photographs and read the manuscript for Gary Kramer's article, "Birding in Barrow" (see page 24), I couldn't help thinking about my own journey to that part of northern Alaska a few years earlier.

Our experiences could not have been more different. I found a frigid, windswept, snow-covered landscape with few birds—just a scattering of Snow Buntings near town, one Snowy Owl moving from iceberg to iceberg offshore, and a passing flock of Common Eiders flying along the edge of the shore ice.

In contrast, Gary found a bird photographer's paradise, with plenty of sunshine, numerous nesting shorebirds, three species of eider, Tundra Swans, Parasitic and Long-tailed jaegers, Greater White-fronted Geese, and on and on.

Why the difference between our visits? Timing. I had come in April to work on a bowhead whale count with staff from the Lab's Bioacoustics Research Program. We camped out on the ice, five miles offshore, for days on end, monitoring an array of hydrophones that were detecting the calls of migrating whales.

I've been to some cold places—Greenland, Iceland, northern Canada—and I thought I'd experienced frigid weather, but nothing cut through my Arctic clothing quite like that wind blowing in across the sea.

Gary was smart. He went to Barrow in mid-June. After reading his article, I highly recommend that anyone visiting this amazingly accessible High Arctic wonderland follow his lead and wait till the better weather and the birds arrive. I'll certainly do that the next time I go there.

Tim Gallagher
Editor-in-Chief

Cover: A Red-throated Loon swims serenely across a pond near Barrow, Alaska. Wildlife photographer Gary Kramer spent a week there in June, documenting the birds of the High Arctic. See his article on page 24.

Right: Is fire good or bad for birds? See article on page 36. Photograph by Jim Brandenburg/Minden Pictures.

Back cover: Got acorns? Acorn Woodpeckers store massive numbers of these nuts in their granary trees, then eat them later when food is scarce. Photograph by Marie Read.

12 THE MYSTERY OF THE DISAPPEARING DIPPERS

by Christy Morrissey

Every spring and summer, American Dippers become scarce in their usual haunts along the large rivers of western Canada, but they reappear each autumn. Where do they go?

24 BIRDING IN BARROW *by Gary Kramer*

This remote town at the far north of Alaska is one of the best areas in North America to find and photograph the birds of the High Arctic.

36 BIRDS AND FIRE *by Kristi G. Streiffert*

Natural fire regimes have been suppressed for decades in the United States, but at what cost to birds and other wildlife?

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Letters

BORN-AGAIN BINOCULARS

I just finished reading with great amusement, Pete Dunne's "Fifteen things to do with your stockpile of retired binoculars" (Winter 2004). Of particular interest was number 15, where he mentions donating them to "Birder's Exchange," a very worthwhile program. Along the same line of thought, Swift Instruments created "Optics for Education," another program that puts old discarded binoculars to good use.

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Having been a sponsor to both the Birder's Exchange and IMBD since their inception, Swift was well aware of the benefits of these programs. Birder's Exchange is a bird conservation program that was created in 1990 to distribute new and used equipment to conservationists, researchers, and educators working to conserve Neotropical migrants and resident birds in Latin America and the Caribbean. The IMBD was created in 1993 to develop birding conservation educational materials to be distributed to educators or students in the United States, Canada, Central America, and the Caribbean.

Robert Fichtel
Swift Instruments

THE BIG ISLAND BLUES

In "Birding Hawaii's Big Island" (Spring 2004), you failed to include some information that's a must for anyone planning to bird there. Car rental companies on the island expressly forbid their customers from driving on the Saddle Road between Waikiki and Hilo. Most companies won't even allow you to take their four-wheel-drive vehicles on the road. About the only way a visitor can legally enjoy birding along the Saddle Road is with a local guide. It's important to make arrangements ahead of time if you want to bird the Big Island's prime habitat. It doesn't lend itself to drop-in birding.

The Saddle Road provides the only access to what little is left of the high-altitude habitat on the island, where most of the remaining endemics cling to existence, and that brings me to the other weakness of the article—and of birding on the Big Island. Like author Tim Gallagher, I enjoyed the interesting volcanic landscapes of the western side of the island and the native birds that occur there, but just about everything else has been devastated by centuries of human tinkering. I quickly tired of looking up birds I'd seen to find that they were alien species. The Common Myna, introduced from India, is present in obscene numbers along the Kona Coast, and even eye-pleasing species like the Yellow-billed Cardinal, Zebra Dove, Saffron Finch, and Java Sparrow soon lost their luster because they are super abundant and occur there only through human fiddling.

Gallagher has it right about Hawaii Volcanoes National Park. It's diverse, beautiful, geologically fascinating, and well worth a visit. As for the other landscapes on Hawaii's Big Island, they seemed a nightmarish preview of what may lie ahead for the rest of the planet.

Keith Chamberlain
Denver, Colorado

We welcome letters from readers. Write to The Editors, *Living Bird*, 159 Sapsucker Woods Road, Ithaca, New York 14850, or send email to <livingbird@cornell.edu>.

Cozumel Thrasher Rediscovered

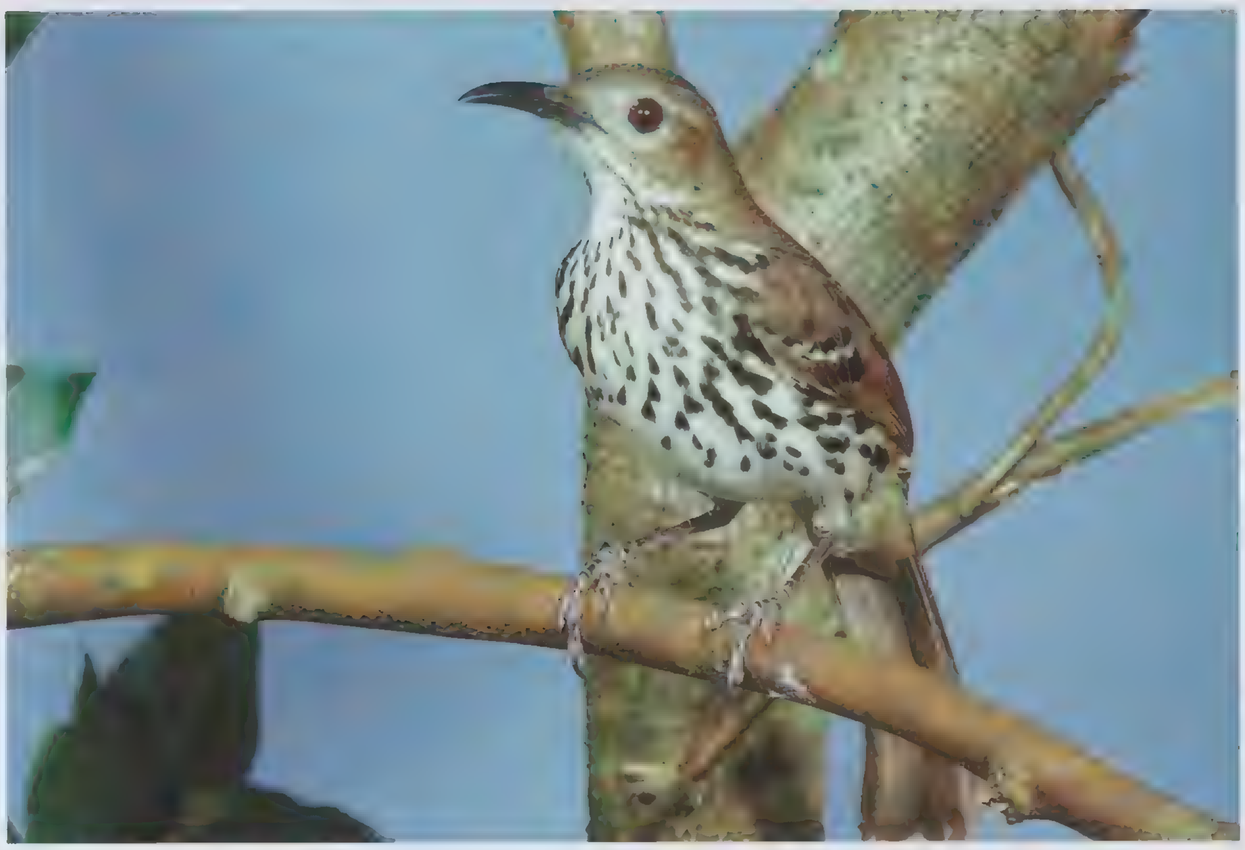
Prospects seemed dim for the Cozumel Thrasher (*Toxostoma guttatum*). The species exists nowhere else but on the island of Cozumel off Mexico's Yucatan Peninsula. Although the bird had once numbered in the thousands, it had become extremely rare by the late 1980s, especially after Hurricane Gilbert tore through the island in 1988.

Hurricane Roxanne slammed ashore a few years later in 1995, and some feared that the second storm might have rung the death knell for the small number of Cozumel Thrashers still hanging on. Although several expeditions were launched to search for the bird, not one Cozumel Thrasher was seen by scientists for nearly a decade. Many researchers believed the bird was extinct.

But the American Bird Conservancy and Conservation International recently announced that the species was rediscovered this past June by a team of biologists the organizations had sponsored to search for the bird. The team, working in conjunction with Villanova University and the Mexican counterpart of the Island Endemics Institute, saw a single individual, confirming that the species was not yet extinct.

"This is terrific news for the species," says George Wallace, vice president for International Programs at the American Bird Conservancy. "It opens a door to a range of possibilities that we hope will lead to the establishment of a protected area if more birds are found."

The Cozumel Thrasher is medium-sized with a long, slightly decurved bill. It is similar in appearance to the Long-billed Thrasher, but smaller.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Before its rediscovery this past summer, the Cozumel Thrasher had not been seen by scientists since 1995 and was thought by many to be extinct.

"The rediscovery of the Cozumel Thrasher is a reminder of two key things: the importance of tropical islands for biodiversity conservation and the importance of never giving up on a species, no matter how rare," says Russell Mittermeier, president of Conservation International.

But of course, there's no way of knowing yet if the species can be saved. Finding an individual bird is fantastic, proving that the species still exists. But many questions remain to be answered. How many Cozumel Thrashers are there? Enough to form the basis of a viable population? And are any of them breeding?

Moreover, what other factors are affecting their numbers? This species must have faced many hurricanes over the millennia. Surely hurricanes Gilbert and Roxanne alone shouldn't have pushed the Cozumel Thrasher to the brink of extinction.

Could introduced species of animals have contributed to their decline in numbers? It's certainly a possibility. In 1971, for example, a movie production company released some boa constrictors on the island after they had stopped filming there. These predatory snakes are abundant now and may have had a devastating effect on birdlife on Cozumel. Sedentary island-dwelling birds such as the Cozumel Thrasher are particularly vulnerable to introduced predators.

The outlook is not entirely bleak, however. Large tracts of deciduous and semi-deciduous forest—thought to be the species' preferred habitat—remain, and the birds are not hunted or trapped for the pet trade. Formal protection and management of Cozumel's habitat could benefit other species on the island, including two other endemic bird species, fifteen endemic bird subspecies, and at least three threatened endemic mammal species.

The team will next try to determine the size and range of the population represented by this single bird, and then return next January, when the birds are known to sing more frequently, to attempt further surveys. To protect this and potentially other birds from human disturbance, the exact location of the discovery is not being disclosed to the public. ■

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Spotlight

OF OILBIRDS AND PIPING-GUANS

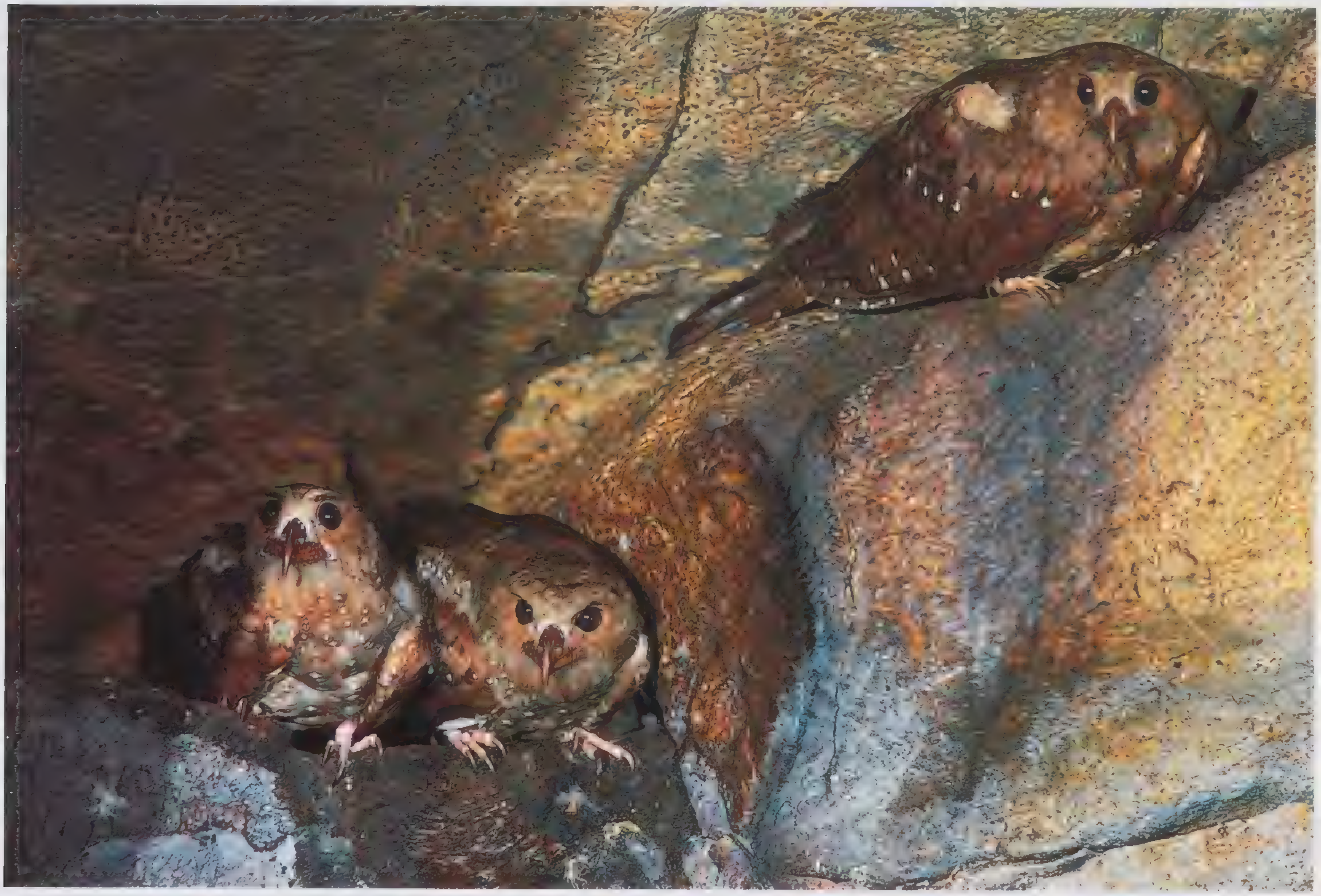
by David S. Wilcove

Tracking Trinidad's rarest birds

January in New Jersey can be as alluring as a cold, dank basement. So when the opportunity arose to escape to Trinidad for a week last winter, I did not hesitate. Lying 10 miles off the coast of Venezuela, the island has long been a Mecca for bird watchers, who are drawn to its tropical avifauna and comfortable accommodations (not to mention its steel-drum bands). A quick review of Richard ffrench's *A Guide to the Birds of Trinidad and Tobago* provided me with two ornithological goals for the trip: Oilbird and Trinidad Piping-Guan. I knew that seeing either of these birds would be an unforgettable experience. What I did not realize at the time, however, was how unforgettable the birds that I did not see would be.

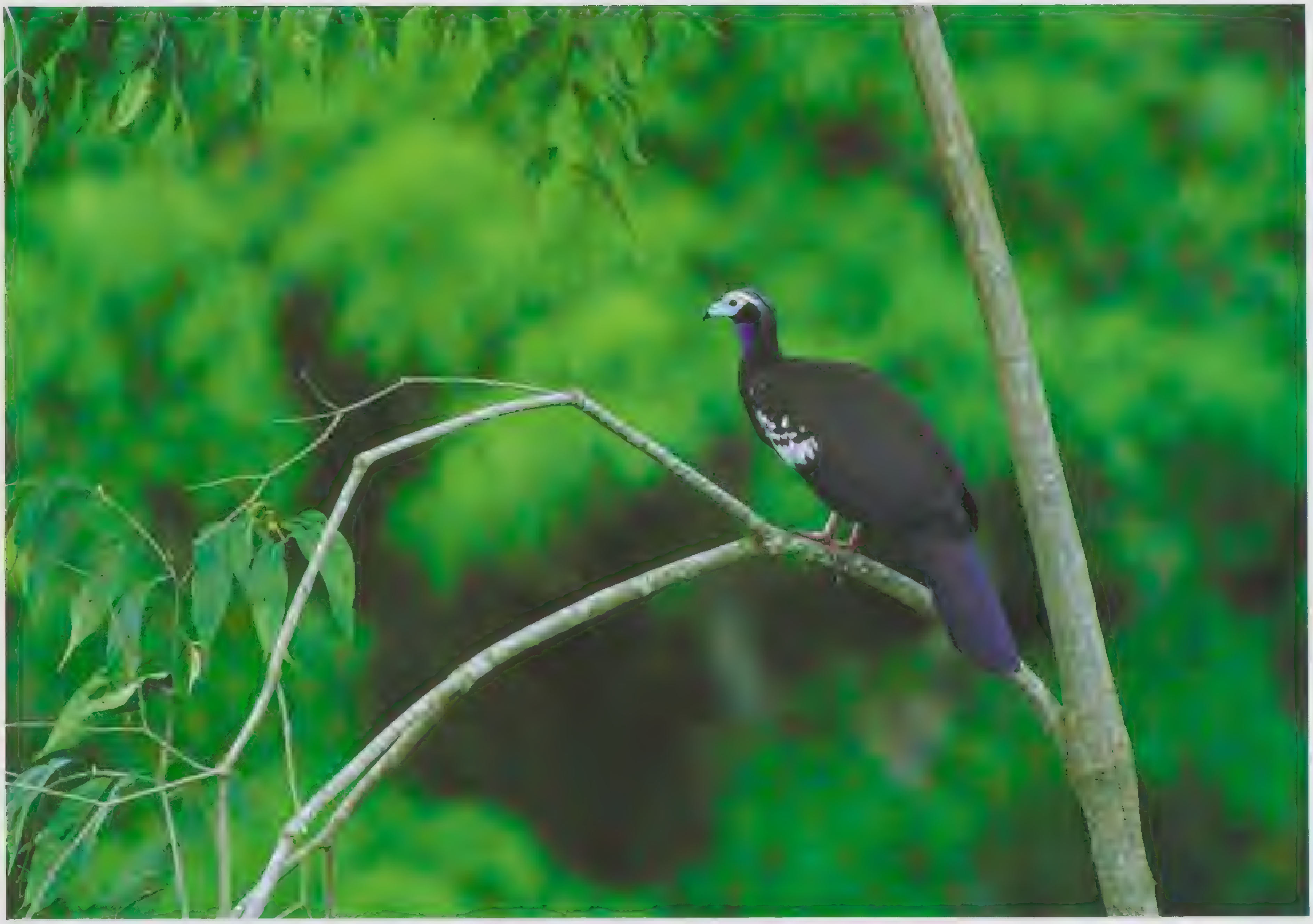
Finding the Oilbird was a snap. A guide from the Asa Wright Nature Center led us through the forest toward a small, dark cave. As we approached the mouth of the cave, we heard a chorus of loud, angry snarls. Since Trinidad is not known for its packs of rabid, cave-dwelling ocelots, the sounds, I reasoned, must come from the Oilbirds. For a few precious minutes, our guide allowed us to step into the cave and scan the walls. There, perched on the ledges, were several dozen Oilbirds: large, cinnamon-brown birds with glowing red eyes and strong, hooked bills. Their nests consisted primarily of regurgitated fruit molded like clay into tall mounds.

Everything about them is strange: their appearance, their vocalizations and, above all, their behavior. To navi-



KONRAD WOTHE/MINDEN PICTURES

Everything about Oilbirds is strange: their appearance, their vocalizations, and, above all, their behavior. They are the only nocturnal fruit-eating birds.



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Looking somewhat like an anorexic black-and-white turkey, the Piping-Guan sports a crest of long, spiked feathers, a dark dewlap, and a patch of light blue skin around the eyes.

gate inside the dark caves where they nest, Oilbirds employ echolocation, adding a steady stream of reverberating clicks to their usual vocabulary of snarls and screams. They also have the distinction of being the world's only nocturnal fruit-eating birds. As dusk falls, the adults exit the caves and range widely in search of the oily fruits of palms and other trees, which they pluck from the branches while hovering like giant moths. Before daybreak, they return to the caves and regurgitate the pulpy mess to their offspring. Fed such a rich diet, the youngsters gain a tremendous amount of weight; upon fledging, they may weigh half again as much as their parents.

The Oilbird is an uncommon species throughout its range. Many nesting colonies have suffered from excessive harassment by people; others may have been harmed by deforestation, which eliminates the fruit-bearing trees on which the birds feed. Fortunately, neither problem applies to the small Oilbird colony at the Nature Center. Visitation there is carefully controlled, and much of the surrounding forest is well protected.

The Trinidad Piping-Guan, however, is not so lucky. The only bird endemic to Trinidad, it is critically endangered, largely as a result of overhunting and deforestation. BirdLife International estimates that fewer than 200 survive in an area of about 60 square miles. My initial inquiries about seeing the guan met with pessimism—the birds were too scarce or they lived in inaccessible areas, I was told—but one of the guides at Asa Wright assured me he could take me to a place where he often saw them, if I had no objections to getting up early and driving a long way.

Leaving the Nature Center long before dawn, we drove for more than two hours along winding roads to the eastern end of the Northern Range, the chain of low mountains that cuts across the top of the island. The road eventually petered out at a cluster of homes at the edge of the forest. As dawn broke, the nocturnal pauraques fell silent, while bands of raucous Orange-winged Parrots awoke and took flight, presumably in search of food and mischief. It wasn't long before another sound—a couple loud claps, followed by a rattle—caught my attention, and I looked up in time to see a guan disappear into the canopy of a large tree at the edge of the forest. I had caught, quite literally, the tail end of a piping-guan's display flight, and it would be many more minutes before I succeeded in seeing the whole bird as it quietly perched in the tree. Looking somewhat like an anorexic black-and-white turkey, it sported a crest of long, spiked feathers, a dark dewlap, and a patch of light blue skin around the eyes. I was thrilled to see the bird, of course, but also saddened that such a delightful oddity teeters at the brink of extinction.

Having seen two of Trinidad's rarest birds in less than 24 hours, I spent the next couple days hiking in the forests around Asa Wright, enjoying the birdlife. Although each day brought sightings of new species, I quickly noticed that my list was not growing very rapidly. Part of this was surely due to my relative lack of experience with South American birds. But it was also due to Trinidad itself. Compared with other places on the Central and South American mainland, Trinidad has surprisingly few birds. Consider the following statistics: Trinidad is slightly more than 1,750 square miles in size and harbors approximately 240 species of landbirds (plus numerous waterbirds). Rancho Grande National Park in adjacent Venezuela is fewer than 350 square miles in size yet contains more than 400 species of landbirds. The best explanation for this difference involves a little bit of geological history and a little bit of arithmetic.

During the Ice Age, with so much of the world's water bound up in ice, sea level was significantly lower than it is today. At that time, Trinidad and its sister island Tobago were connected to the South American mainland and presumably shared flora and fauna. About 10,000 years ago rising temperatures caused much of the polar ice to melt, leading to a sudden rise in sea level. The "land bridge" connecting Trinidad and Tobago to the mainland was severed, resulting in the creation of the two present-day islands. Because many tropical birds, especially those that inhabit the forest interior, are loathe to cross open water, their populations in Trinidad were now isolated from populations on the mainland. (These sorts of barriers pose less of a problem for strong fliers such as shorebirds, waterfowl, swifts, and swallows.)

Small, isolated populations are prone to extinction, even in the absence of persecution or further habitat destruction. Over time, many such populations tend to wink out. Could 10,000 years of isolation have resulted in the disappearance of certain birds from Trinidad? Perhaps. There is a well-known relationship in ecology between the size of a patch of habitat and the number of species it contains: the larger the patch, the more birds it is likely to contain. Thus, by counting birds within forest blocks of different sizes on the South American mainland, ecologists can estimate crudely how many landbirds a Trinidad-sized piece of land would have if it were located on the adjacent mainland, and they can compare this number with the actual avifauna of Trinidad. If the number of landbirds on Trinidad today is less than the predicted number, the implication is that species have disappeared from Trinidad in the years since it became disconnected from the mainland. One such calculation suggests that nearly 150 species of landbirds may have disappeared from Trinidad since it became an island. Most of these birds are presumed to have vanished thousands of years ago, long before any ornithological inventories were made.

There are plenty of problems with this arithmetic. For example, it does not explicitly control for habitat diversity, either on Trinidad or on the mainland, which, as all bird watchers know, is a crucial factor in determining overall avian diversity. Yet even if the actual number of extinctions is only a fraction of the calculated value, it carries an ominous warning to conservationists. Isolation doesn't require an ocean. For some forest-dwelling tropical birds, a barrier as simple as a road or a pasture may suffice. If an island of 1,750 square miles can lose a significant number of birds, what will happen to the birdlife in the world's parks and nature preserves—most of which are far, far smaller than Trinidad—as the land around them is turned into increasingly inhospitable farms, pastures, and cities? That worry keeps many conservationists up at night, just like the Oilbirds at Asa Wright. ■

Suggested Reading

Terborgh, John. 1974. Preservation of natural diversity: the problem of extinction-prone species. BioScience 24: 715-722 (December).

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THE MYSTERY *of the* DISAPPEARING DIPPERS

A foraging American Dipper (above) peers under water to search for food in western Canada's Chilliwack River. The dipper is North America's only aquatic songbird.

TEXT BY CHRISTY MORRISSEY
PHOTOGRAPHS BY ROBERTA OLENICK

Every spring and summer, American Dippers become scarce in their usual haunts along the large rivers of western Canada, but they reappear each autumn. Where do they go?

On a cold winter morning in late January, we set out for the Chilliwack River in the Cascade Mountains, an hour's drive east of Vancouver, British Columbia. It is a particularly beautiful day, with water levels on the river low enough to see many emergent rocks covered in ice crystals and the riverbanks topped with fresh snow. Generally speaking, it is too cold for birding, but we are searching for a species that is not bothered by cold weather. As we walk toward the river, with snow cracking underfoot, we stop abruptly in our tracks. A cheerful animated song rings out above the whirring rapids. My assistant strains her ear toward the river. "Did you hear that?" she blurts out. The song grows louder as we rush to the riverbank. "There!" I shout and point low on the water. A tiny gray bird perches on a shiny rock in the middle of the river, bouncing up and down as it sings its vibrant song. It is our first American Dipper of the day.

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Author Christy Morrissey (above) untangles a dipper that she captured in a mist net. During the course of her four-year study, she banded more than 500 of these birds.

For more than five years, I have been studying this curious bird of waterfalls, rapids, and clear cold streams. The American Dipper may be a plain-looking, starling-sized gray bird, but it is anything but ordinary. As North America's only truly aquatic passerine, the dipper has special adaptations for living in a cold, watery environment. In fact, dippers have been found feeding at ice holes where ambient temperatures approach -40° Celsius. How do they do it? A heavy layer of feathers and down provides warmth and insulation from frigid temperatures. A large oil gland at the base of the tail, about 10 times larger than that of the average songbird, ensures that their feathers stay waterproof. They also have the ability to see insect and fish prey under water and have nasal flaps not found in any other songbird. Their strong legs and feet are used for gripping slippery rocks in swift water, and a heavily developed musculature of the wings is ideal for underwater swimming and diving in strong currents.

With its curious bobbing and dipping and frequent plunges into the rushing rapids of icy mountain streams, the dipper captures peoples' attention and has continued to capture mine. I began my research as a Ph.D. student at Simon Fraser University in British Columbia, trying to find answers to some of the essential biological questions about this poorly studied species. In particular, we knew very little about the dipper's annual movements. During winter, birders and fishermen frequently see this wonderful little songbird diving for salmon eggs and insects near their feet. But in the spring and summer months, dippers seem rare, only reappearing once again on their familiar riverbanks the following autumn. And no one really knew where this mysterious little water bird went during its seasonal absence.

So I set out to solve the mystery of the disappearing dipper. First I needed to document how many birds made up our winter population and how many moved away from their winter sites in spring to breed. Every two months from 1999 to 2003, we surveyed the study area along the Chilliwack River, counting all the dippers we saw and heard. But I knew we also needed to try and recognize individual birds. Over a four-year period, we captured and banded more than 500 dippers, using mist nets set up over streams to intercept each dipper's flight path or banding nestlings during routine nest monitoring. This allowed us to mark each dipper with a unique combination of color bands on its legs that were easy to view with binoculars or a spotting scope at distances of 100 meters or more. The band combination was linked to a database of information about each bird's age and sex and, most importantly, where it had been sighted before.

As previously observed by bird watchers, we found that the dippers did indeed disperse in spring, becoming uncommon in places where they were formerly abundant. The number of dippers along the Chilliwack River fluctuated widely between seasons, from a peak of 10 birds per kilometer in November to a low of only 2 birds per kilometer in July. By March or April, most of the winter population (about 85 percent) had moved away from the low-elevation river to breed elsewhere, leaving only a handful of resident breeders in the spring and summer months. Curiously, many of our banded dippers returned the next fall to the exact stretch of river where they had wintered the previous year, once again exploiting familiar pools and eddies for invertebrates and salmon eggs. Although this information was important in confirming that the fluctuating numbers were caused by movement and not the death of the birds, I still knew little about the birds' whereabouts in the summer.

To find out where the majority of the study population went in the breeding season, I needed to identify birds that left the river and follow them to their breeding sites. In late winter of 2000, we recaptured 14 banded dippers and, for the first time ever for this species, mounted tiny radio transmitters on the birds' backs with a special waterproof epoxy. Each radio weighed less than 2 grams and was powered by a battery that would last up to 12 weeks. It wouldn't be long before the birds sensed the days getting longer and led us to their breeding destination.

The tiny radio transmitters were extremely powerful. Searching the entire 1,200-square-kilometer watershed in a small fixed-wing aircraft, we found all but two of the radio-tagged dippers. Although they remained within the watershed, the radio-tagged birds moved variable distances from their wintering areas to their breeding sites, ranging from only 1 kilometer to more than 15. They moved, however, in a predictable pattern, with most birds traveling upstream onto smaller creeks or tributaries. We found one bird right at the snow line, high in the mountains. We also located dozens of other color-banded dippers that didn't have radio transmitters. Many individuals that wintered along the main stem of the Chilliwack River were breeding upstream on nearby tributaries such as Tamihi Creek or Foley Creek. For the first time, we could say for sure that many American Dippers display a special kind of migratory behavior known as "altitudinal migration," moving to higher or lower elevations seasonally. The migratory individuals wintered on the low-elevation river and then moved to higher-altitude tributaries to find nesting sites.

The reason for this migration strategy relates to a general shortage of suitable nest sites. An appropriate site along a watercourse is not always easy to find, because dippers need a safe place to build their nests away from predators and rising water levels. Pairs of dippers fill their bills with large clumps of green moss and skillfully build large, dome-shaped nests lined with grass and leaves collected from stream banks. The nest is frequently set precariously above swift-moving water on cliff ledges or large boulders, fallen logs, or under a small bridge, depending on what is available. Where suitable nest sites are lacking, congregations of wintering dippers are forced to move away from the low-elevation

American Dippers are superbly adapted to foraging in cold water. A heavy layer of down insulates them from frigid temperatures, and an oversized oil gland at the base of their tail keeps their feathers waterproof.

river to find a breeding territory on the smaller tributaries. The few pairs lucky enough to find and secure nest sites breed on the river where they spent the winter. This means that dippers can breed over a large elevation and habitat gradient, and I wondered whether this would have implications for their success in raising young.

For three years I followed the fate of 150 dipper nests in the Chilliwack watershed from the time the pairs built their nests and laid their eggs to the fledging of their chicks. It takes about six weeks from the time the first egg is laid until the newly fledged dippers leave their nest. We monitored nests of resident dippers on the river and nests of the altitudinal migrants up the creeks. About 60 percent of the nests were successful, but the river residents had a definite advantage. Resident birds were able to start breeding earlier on the river because they could skip the migration period, and most of them already had a mate and a territory. This meant they were able to avoid the peak predation period when weasels, hawks, and crows are at their highest numbers after producing their own young. Most importantly, the early breeding dippers could also escape the floods from the spring snowmelt. The spring floods washed away more creek nests than river nests and caused an overall lower production of young by migrants. The residents had another advantage. Because they started earlier, they often could fit in a second brood in the same season, which further boosted their overall productivity. It appears that altitudinal migration by dippers is a necessary process to ensure that more birds can breed, even if it comes with a cost.

When the breeding season was over, adult and juvenile dippers wandered away from their nest sites. As territory lines began to diminish and birds recuperated from the stressful breeding period, many dippers sought out easy food sources and safe areas to molt in late summer. During this time, they are often highly secretive as their tattered flight feathers fall out and are replaced with fresh ones that last for another year.

Cold weather arrives early in the mountains,

At left, a dipper works on its nest. When finished, the nest will have an enclosed moss dome with a small opening near the bottom, lined inside with a cup of twigs, grasses, and leaves. Both sexes participate in nest building, which can take as little as two days. An adult dipper (above) feeds a salmon fry to its fledgling. Note the identifying color bands on the adult's legs.

A dipper eats a coho salmon egg (below). Dippers are opportunistic foragers and take advantage of the high concentrations of eggs during the salmon spawning runs. At right, two fledgling dippers. Dippers generally fledge at 25 days.

and by the beginning of fall, the birds on the tributaries begin their downstream migration back to the low-elevation river where they once again share the stream banks for the winter with many other dippers. Each winter, we have resighted many banded dippers that returned to their familiar river reach. We do not know for sure why they move downstream in autumn. Maybe it is to avoid the cold and ice or to exploit the nutritious and abundant resources available on the river.

British Columbia rivers and streams are home to several species of Pacific salmon and steelhead trout. The salmon runs, which take place primarily in autumn, provide a rich source of food for many wildlife species. Bald Eagles, for example, congregate around coastal salmon spawning streams in winter. Hundreds of eagles dot the trees along the Squamish River in southwest British Columbia, feeding on the decaying salmon carcasses in the stream. Dippers have similarly learned to take advantage of this abundant resource by targeting salmon eggs from the gravel streambed. They collect the eggs with seemingly little effort, at a time when poor weather may put a large demand on their energy reserves.

Dipper populations use large areas of a watershed and are extremely dependent on the quality both of the water in which they feed and of the surrounding habitat where they nest. As mining exploration, riparian logging, and numerous other developments continue to threaten streams across North America, dipper numbers are declining throughout their range. It is extremely important to protect our watersheds not only as a source of clean fresh water for humans but also to preserve unique wildlife such as the American Dipper.

After studying this interesting little bird for several years, I realize that I am captivated most by its repeated disappearing act. One minute it will be standing and bobbing on a streamside rock, the next minute it will leap carelessly into the fast-flowing frigid water in search of prey, vanishing under the surface only to reappear moments later on a new rock to begin its dipping motion again. I have come to recognize that the dipper's curious feeding behavior in some sense parallels its annual movements. Much as feeding dippers dive and disappear under water only to reappear moments later, breeding dippers disappear from the lower reaches of the Chilliwack River each spring in search of nesting sites throughout the watershed, reappearing once again when the cold weather hits the high country. Although I am reasonably certain that a dipper will resurface after each plunge into the water, the birds' continued reappearance on familiar rivers each autumn depends on our efforts to protect and conserve their fragile mountain habitat. ■

Christy Morrissey completed a Ph.D. in ecotoxicology and wildlife biology at Simon Fraser University last year, studying American Dipper migration and its link to contaminants found in mountain streams. She is currently studying the effects on woodpeckers and other forest birds of pesticides used in interior forests affected by mountain pine beetles.

Roberta Olenick is a freelance wildlife photographer based in Vancouver, British Columbia.

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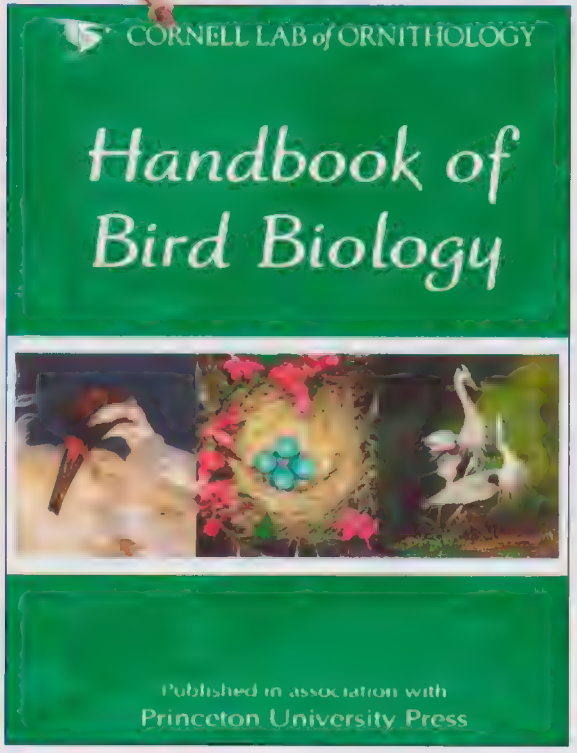
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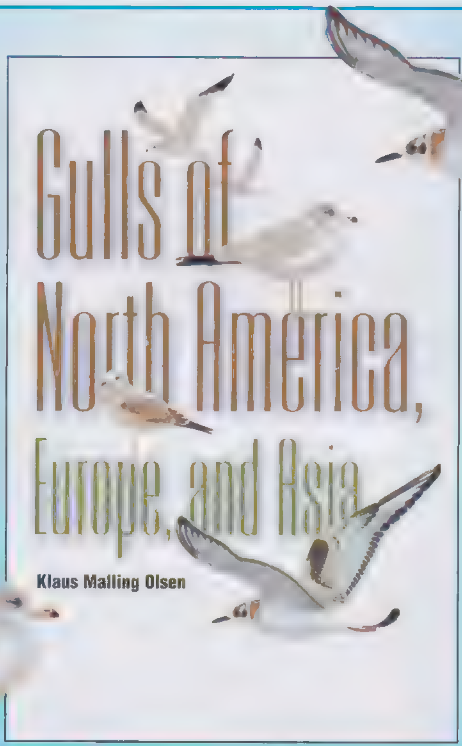

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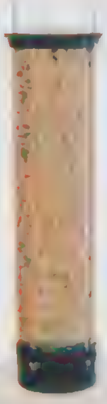

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BIRDING IN BARROW

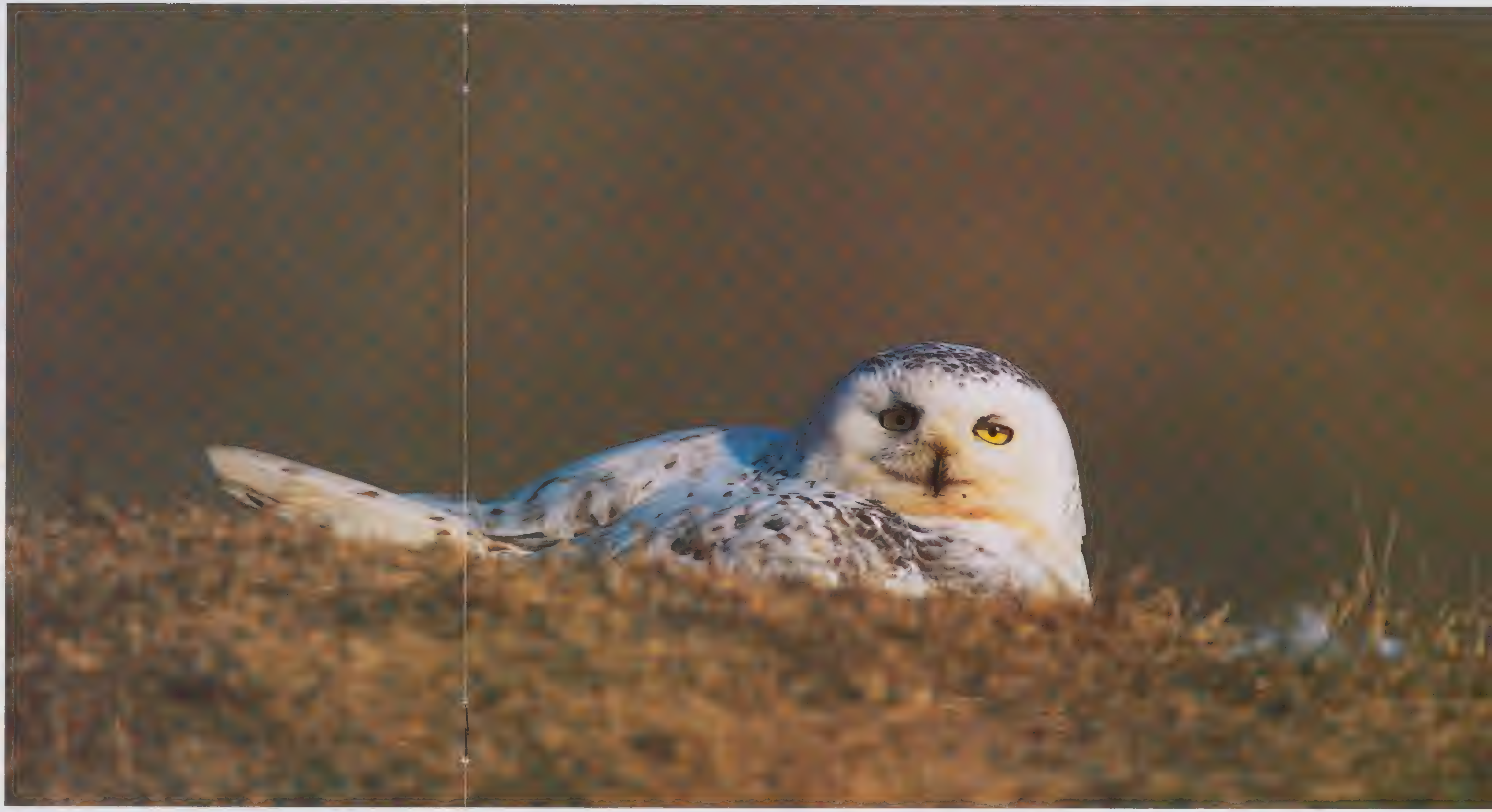
TEXT AND PHOTOGRAPHS
BY GARY KRAMER

As the airplane made a wide turn approaching the tiny airport, I pressed my nose against the window of the 737, like a kid on a field trip. Below, tundra ponds reflected the high cumulus clouds overhead, and a patchwork of fog lingered over the coastline. In the distance, icebergs floating in the Chukchi Sea looked surreal. Stepping onto the runway a few minutes later, I was hit squarely in the face by a blast of cold air blowing over the frigid sea. Welcome to Barrow, Alaska—the northernmost town in North America.

Barrow lies 725 miles north of Anchorage on a peninsula separating the Chukchi and Beaufort seas. It has a tiny human population—only 4,500 people, mostly Inupiat Eskimos. Barrow's main sources of income are oil, tourism, and fishing. But I had come to photograph High Arctic birds, many of which are difficult to find elsewhere in accessible places, even in Alaska. Barrow was attractive to me because it is served by daily commercial flights from Fairbanks and has some 50 miles of gravel roads. Although that doesn't sound like much road, most bush towns in Alaska only have two roads—one going to the airport, the other to the local dump.

The expanse of tundra that begins literally at the end of the airport runway hosts many Arctic species,

The Inupiat name for Barrow is Ukpiagvik, which means "the place where we hunt Snowy Owls." Appropriately, the Snowy Owl at right was the first bird the author photographed in Barrow.



This remote settlement at the far north of Alaska is one of the best areas in North America to find and photograph High Arctic birds

BHL

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A flock of Tundra Swans comes in for a landing at the wetlands along Gas Well Road. At right, a Red Phalarope in stunning breeding plumage forages nearby. These birds spin in tight circles as they feed, stirring up various insect larvae and crustaceans.

including King, Spectacled, and Steller's eiders; Long-tailed Ducks; Parasitic and Pomarine jaegers; Snowy Owls; Long-billed Dowitchers; Dunlin; Pectoral Sandpipers; American Golden-Plovers; Arctic Terns; Greater White-fronted Geese; Red-throated Loons; and more during nesting season. Many of these birds come from as far away as South America to breed and raise young in this remote region far above the Arctic Circle. Here, from mid-May to early August, the sun never dips below the horizon.

When the first shorebirds and waterfowl arrive, the ponds are still frozen, and the tundra is covered with snow. But soon open water starts appearing along the edges of ponds, and the tundra begins showing through the white mantle of snow. Birds such as Snowy Owls and Common Ravens that have braved the harsh winter, with nearly 60 days of darkness and temperatures that fall to -30° F and lower, set up breeding territories while migrants begin arriving in numbers. By early June, the tundra is alive with the sights and sounds of birds.

Soon after my plane landed, I picked up a rental vehicle and headed south on the three-mile road that leads to Fresh Water Lake. Traveling down the road, I caught a glimpse of a white form sitting on a large earthen berm about 200 yards ahead. I pulled over and in seconds was looking at a magnificent Snowy Owl. I frantically grabbed my tripod and camera and moved along the edge of the road toward the owl. Sixty yards from the bird I stopped and set up my tripod, but before I could focus, the owl flew off. It landed 300 yards away near what I soon discovered was a cemetery adorned with white crosses and bouquets of plastic flowers. This time the bird cooperated, and I managed to capture a dozen images before the owl decided to look for another roost. As luck would have it, my first bird in Barrow was an Arctic icon, one of the few Snowy Owls I had ever seen. It seemed even more appropriate when later I found out that the Inupiat name for Barrow is Ukpiagvik, which means "the place where we hunt Snowy Owls."

Elated at my good fortune, I continued south. Soon tundra ponds appeared on both sides of the roadway, so I slowed the car and looked for birds. Before long I came upon a pair of stunning Red Phalaropes feeding in their characteristic manner, spinning in circles to stir up larvae, insects, and crustaceans. I marveled at how unconcerned the birds were by my presence and photographed them at

An adult American Golden-Plover (above) stands on a patch of snow not far from its nest. These birds fly all the way from their wintering grounds in South America each spring to nest on the Arctic tundra.

close range. Near the end of the road, a yellow marker indicated a trail leading to the southeast. About 100 yards off the road, I scanned a wide swath of tundra and wetlands with binoculars. I saw a pair of Red-throated Loons in a distant pond, then a pair of King Eiders, and finally several shorebirds. Returning to the car, I grabbed my camera gear and headed down the trail.

Because the tundra is more wet than dry and crossing wetlands and tundra ponds is unavoidable, hip boots became part of my daily attire, along with waterproof clothing. I layered clothing to adapt to changing temperatures and conditions. Even in mid-June, temperatures ranged from 35° to 42° F during the day to 28° to 35° F in the early morning hours. Rain is likely and snow possible every month of the year, so you must be prepared.

My goal when I left the vehicle was to get a good look at the loons and eiders. But less than a quarter of a mile from the road, I flushed an American Golden-Plover from her nest. She was quickly joined by her mate, and they performed the classic broken-wing display to lure me away from the nest. I enjoyed the show briefly before moving on and letting the pair settle back to their incubation duties. Farther down the trail, I used a low tundra ridge as a vantage point and got a good look at a pair of Red-throated Loons.

When I reached the lake where I had first seen the King Eiders, it took me nearly 10 minutes to spot them, tucked away deep in a cove. The spectacular male with his distinctive orange knob, pink bill, and powder-blue crown contrasted starkly with the brown female. I began the 500-yard walk, keeping an eye on the birds as I slowly moved closer. Every time they stopped feeding, I froze. When they started feeding again, I moved forward. It took nearly 30 minutes to get within 40 yards of the birds. To keep a low profile, I kept my tripod low, moving forward and shooting from my knees. I took a few images, waited, then moved still closer. After half an hour, I was within 10 yards of the pair. Suddenly, both birds stopped feeding as a single male landed nearby. For the next hour, I watched as the new drake made several attempts to move close to the pair, only to be rebuffed. Eventually, the lonesome male apparently realized that his advances were leading nowhere, and he flew off as suddenly as he had appeared. Finally, the pair swam to a small island near the center of the lake and went to sleep.

As I headed back to the car, I glanced at my watch—it was nearly midnight! The sun was still well above the horizon, with plenty of light for photography. I realized the appropriateness of the name: "Land of the Midnight Sun." By the time I walked back to the vehicle, drove to town, and hit the sack, it was 2:00 A.M. I had been in Barrow less than 12 hours and had already seen many Arctic species, including several life birds that I had traveled more than 4,000 miles from California to observe and photograph.

I was up at 5:00 the next morning and in the field before 6:00. I headed south on Cake Eater Road, which eventually turns into Gas

TRAVELING TO BARROW

The birding is good in Barrow from June through August, but the time to see the greatest diversity of species is the first three weeks in June. At that time, it is also too cold for mosquitoes, which can be a problem later in the summer.

Alaska Airlines offers daily flights to Barrow from Anchorage and Fairbanks, (800) 426-0333. Accommodations are available at the King Eider Inn, (888) 303-4337, web site: <www.kingeider.net>; the Airport Inn, (907) 852-2525, email: <airportinn@barrow.com>; and Top of the World Hotel, (907) 852-3900, email: <tow@asrc.com>.

Rental vehicles are available at the King Eider Inn (hotel guests only) or from UICDC Car Rentals, (907) 852-2700 or (907) 852-1534. Car rental prices range from $100 to $130 day, and gas runs about $3.00 per gallon. Vehicle tours to Point Barrow are available from Arctic Adventures, (907) 852-3800, and Arctic Tours, (907) 852-4512.

The Ukpeagvik Inupiat Corporation owns most of the area surrounding the town of Barrow, and a trespass permit is required to walk on the tundra or drive to Point Barrow. The annual cost is $50 per person, and it can be purchased by mail from UIC-Real Estate, P.O. Box 890, Barrow, Alaska 99723, (907) 852-4450, email: <bahsogeak@ukpik.com>, or in person at their office in the Naval Arctic Research Laboratory.

There are restrictions and guidelines for photographing Snowy Owl nest sites. For information, contact UIC-Real Estate or the Owl Research Institute, (406) 644-3412, email: <owlmontana@charlo.net>. High Lonesome Birdtours, (800) 743-2668, email: <hilone@hilonesome.com>, and Borderland Tours, (800) 525-7753, email: <rtaylor@borderland-tours.com>, offer guided trips to Barrow that include airfare from Anchorage or Fairbanks, accommodations, food, and transportation in the field.

A signpost in Barrow highlights the distances to various places in the world. Barrow is closer to the North Pole than to any city in the Lower 48 states.

Well Road and heads southeast more than 12 miles before reaching a dead end at a well. This road takes you to a huge expanse of tundra, wetlands, and lakes, where you can see a wide variety of birds if you stop periodically and scan with binoculars. I saw Long-tailed Ducks, Parasitic and Long-tailed jaegers, Dunlins, Pectoral Sandpipers, Semipalmated Plovers, Pacific and Red-throated loons, and Snowy Owls. Gas Well Road is a good place to look for passerines near the buildings. Both Lapland Longspurs and Snow Buntings perch and feed around the buildings and Common and Hoary redpolls build nests in sheltered locations there.

The last mile of Gas Well Road is a great place to scan the wetlands for eiders and other waterfowl, including Northern Pintails, Tundra Swans, and Greater White-fronted Geese. It was here that I had my first encounter with Spectacled Eiders. I saw five pairs of them within a half mile of the road. Nearby, I spotted a cooperative pair of Red-necked Phalaropes and took many close-up pictures of them. Less than 50 yards away, a pair of Red Phalaropes foraged, while a male Pectoral Sandpiper made a series of low flights, inflating his pectoral sac and calling with a low-pitched whooping sound to attract females.

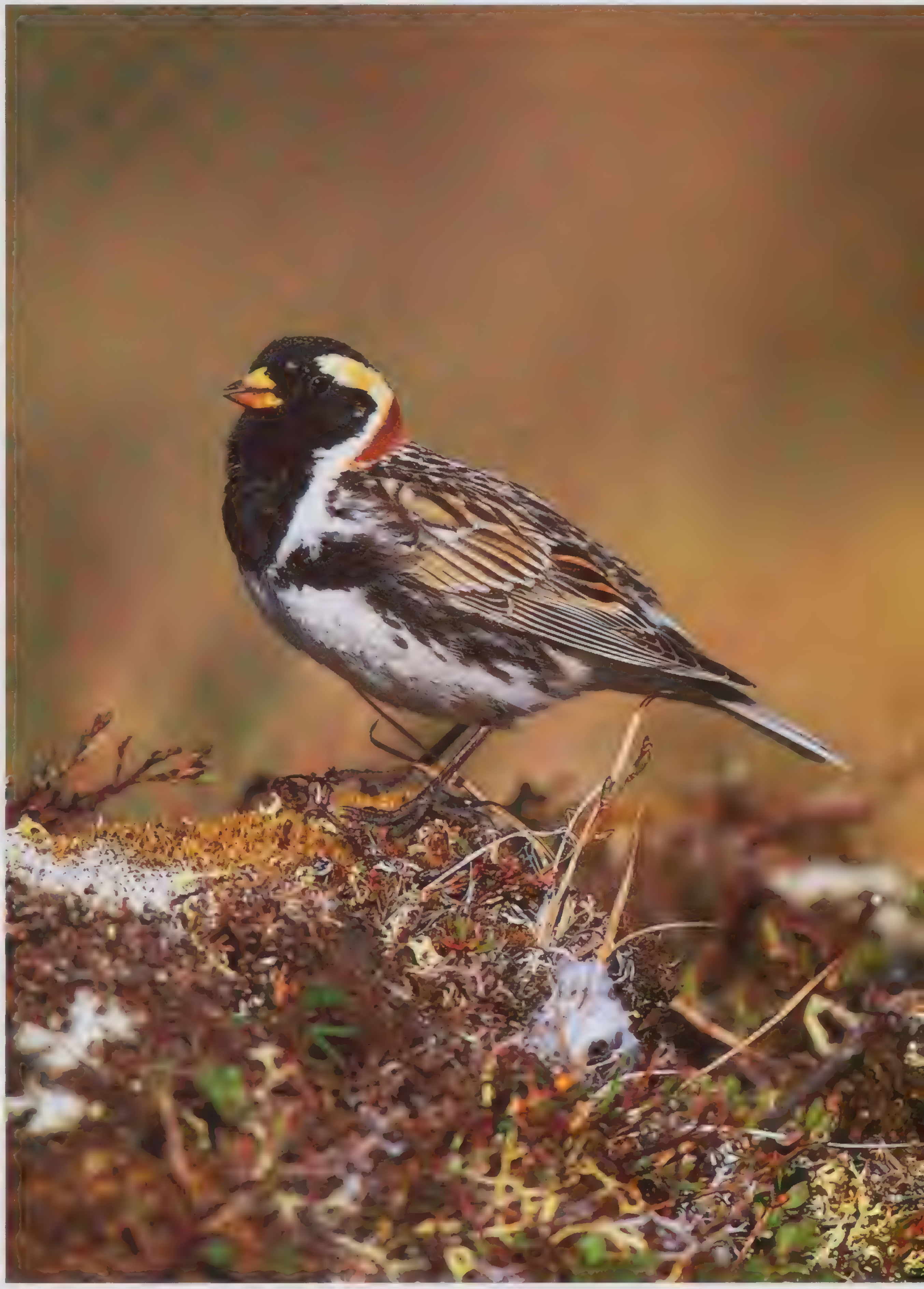
When I was within a few hundred yards of the car, I almost ran into a pair of Spectacled Eiders that were feeding in a tundra pond. I was so intent on getting back to the vehicle and putting down my heavy load that I didn't notice them until they were less than 100 yards away. During the next two hours, I photographed them resting, feeding, and preening, at times from only six or seven yards away.

By the end of the second day, I had already checked off many of the species I had traveled to Barrow to see. I had photographed a dozen species and gotten excellent looks at several more. One species I had especially wanted to photograph was the Steller's Eider, but after talking with several U. S. Fish and Wildlife researchers who were in Barrow specifically to study this species, my hopes plummeted. Apparently, Steller's Eiders visit Barrow in varying numbers each year. Only a handful of them had been seen during the preceding three weeks and none in the past few days. I realized that the probability of photographing or even seeing a Steller's Eider was very low.

The third day was as clear as the first two, but I scrambled to cover as much ground as possible while I had good weather for photography. Barrow is notorious for the heavy fogs that roll in from the ocean without warning and blanket the town for days on end.

The next day I set my sights on a trip to Point Barrow, which would require using a four-wheel-drive vehicle. From the center of the town of Barrow, the base of the spit is seven miles away. Here a sign warns visitors about polar bears, which sometimes roam the spit

The Parasitic Jaeger (facing page) is a common predator of the northern tundra, preying on the eggs and young of other birds. Below, an adult male Lapland Longspur perches on the tundra near its nest.



looking for the carcasses of whales and seals. Although I didn't see any bears when I went to Point Barrow, visitors should keep constantly alert for them.

It is four more miles to Point Barrow and three miles farther to Plover Point. Along the way, birders should scan the tundra ponds for waterfowl and shorebirds. During the spring migration from early May to early June, Point Barrow is a point of passage for flocks of King and Common eiders. By mid-June the migration is mostly over, but I did see one flock of 40 King Eiders flying over the point. The spit is a great place to watch for Long-tailed Ducks, Arctic Terns, Sabine's Gulls, Glaucous Gulls, and Black Guillemots in the open water between the land and the pack ice. In June, the ice is often only a few dozen yards off the beach.

After spending six days in Barrow without any fog or rain, the lack of bad weather became a topic of conversation with the locals. The weather was unseasonably clear, but my film supply was quickly running low, as was my stamina as I attempted to pack as much into each day as possible. On the seventh day of my visit, fog finally moved in from the Beaufort Sea, and visibility dropped to zero. The good part is, I finally got a good night's sleep, completely content after spending so many perfect days in this amazing place.

Barrow is an experience every birder should try at least once. The stark beauty of the Arctic, the diversity of birdlife, and the tranquility of the north will stay etched in your memory forever. ■

Gary Kramer is a freelance writer and photographer based in Willows, California. Visit his web site at <www.GaryKramer.net>.

Barrow offers a spectacular array of waterfowl, such as Spectacled Eider (facing page), Greater White-fronted Goose (above), and King Eider (below) in areas that are easily accessible by car. But visitors must purchase a trespass permit to walk on the tundra or drive to Point Barrow.

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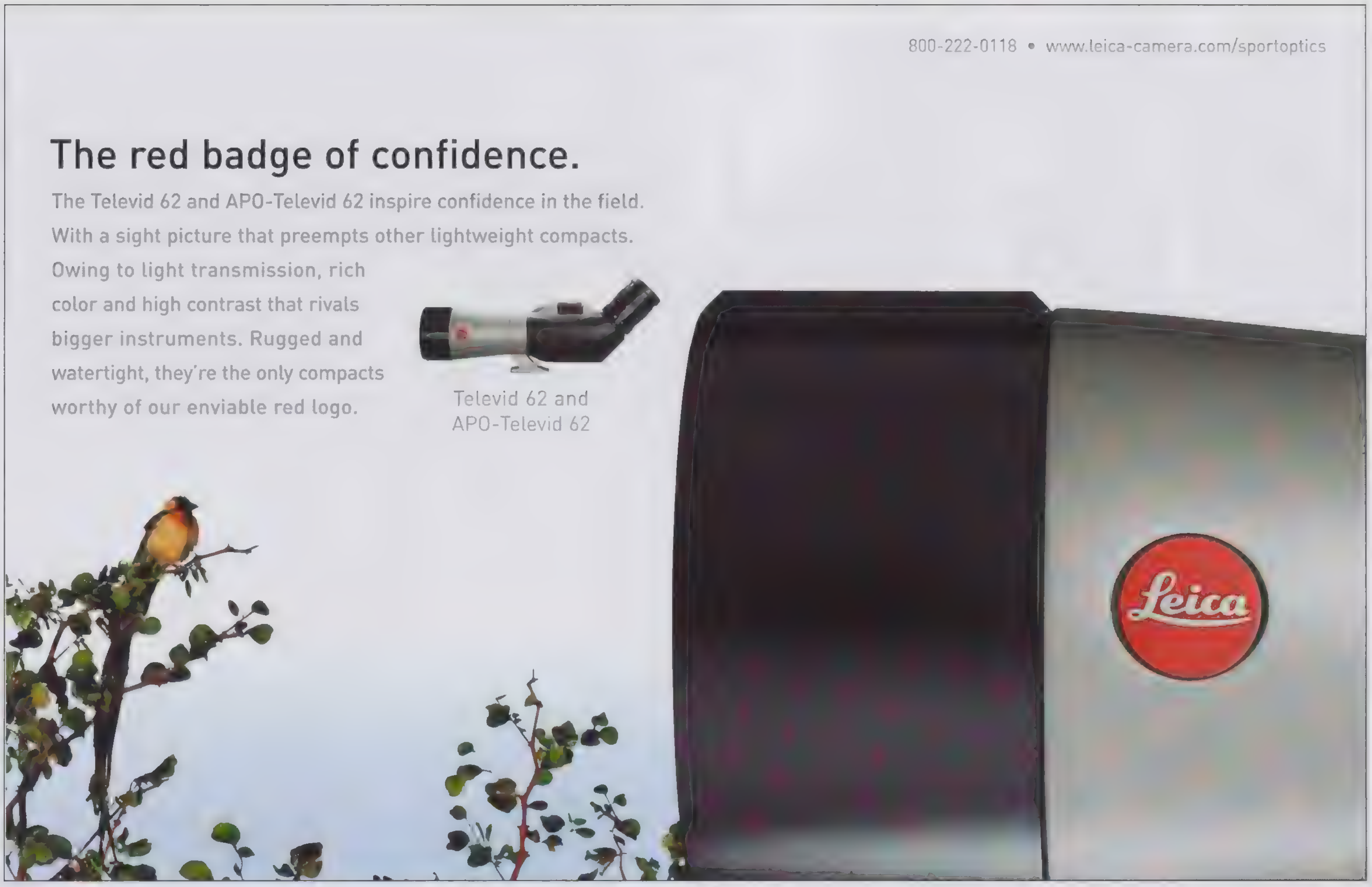

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BIRDS *and* FIRE

Natural fire regimes have been suppressed for decades in the United States, but at what cost to birds and other wildlife?

BY KRISTI G. STREIFFERT

During the violently burning 2002 Missionary Ridge Fire in Colorado, a tornado-like phenomenon swept waterfowl from the marshes of Lake Vallecito, swirling them to a fiery death. To many frightened observers, the sight seemed to symbolize the destructive nature of fire. But to those who have been watching how forest fires have been growing more and more fierce in recent years, it might also symbolize the spiraling effects of 60 years of fire suppression by the U.S. Forest Service and other government agencies.

Most bird watchers know from their own studies and observations that the disruption of

A forest fire (left) is a natural occurrence, promoting healthier woodlands. A Ruffed Grouse (below) forages in the newly sprouting vegetation after a forest fire.

JIM BRANDENBURG/MINDEN PICTURES

To the human eye, the charred landscape after a forest fire looks like a scene of death and utter destruction. But many animals depend on the habitat enrichment and renewal that fire brings. For the Black-backed Woodpecker (at right), fires provide snags for nesting sites and increase the numbers of wood-boring insects upon which they feed.

natural cycles nearly always harms habitats and their associated bird communities. It should come as no surprise, then, when we read in the popular press that our fire suppression policies have come at a high price, as years of accumulated fuels and undergrowth explode into unexpectedly violent fires or as forests spared from fire become less vigorous without the renewal provided by occasional burns.

Many researchers now believe that the declines of some Neotropical migratory birds, such as the Olive-sided Flycatcher, are linked to long-term fire suppression. As an example of how vital fire is for some species, the Kirtland's Warbler seemed bound for extinction until an out-of-control fire proved to be just what the species needed to spark an astonishing population revival. Wildfires that historically swept through the warblers' northern Michigan habitat had served several vital functions in creating the young, dense stands of jack pine where the warblers nest. Before fire suppression became the norm, periodic fires had consumed the old pines, releasing seeds from their cones and burning off competing ground vegetation.

Many grassland sparrows, shorebirds, raptors, woodpeckers, and other birds depend on the habitat enrichment and renewal that fire brings. Even biologists are sometimes surprised at the positive effects of fire. A massive 1995 blaze at Point Reyes National Seashore in California had researchers predicting very low songbird productivity for the following spring. Instead, nests located within the burn zone had a success rate 15 percent higher than nests in the unburned habitat. Some of the species showing higher productivity included Allen's Hummingbird, Black-headed Grosbeak, Common Yellowthroat, MacGillivray's Warbler, Wilson's Warbler, Orange-crowned Warbler, and Song Sparrow.

Studies conducted at Audubon National Wildlife Refuge in North Dakota found that ducks and Sharp-tailed Grouse had higher reproductive success rates in burned areas and that Piping Plover nesting success increased in response to prescribed burns (controlled fires that are intentionally set to benefit habitat) on beaches. And in the Southeast, frequent prescribed burns (every one to five years) have proved essential for maintaining sustainable populations of Red-cockaded Woodpeckers, Brown-headed Nuthatches, and Bachman's Sparrows.

But fire suppression is not necessarily the only culprit. "It is an important factor, but people need to be aware that there are other explanations for the severe fires we've seen since the 1980s," says Natasha Kotliar, a researcher at the U.S. Geological Survey who has been studying the effects of fire on birds for 12 years. For example, she says, it's not clear whether the massive Yellowstone fires of 1988 were due more to decades of fire suppression or to the severe, prolonged drought and high winds of that August.

Other factors that have disrupted the natural fire cycle of forests are livestock grazing, timber harvesting, the spread of invasive plant species, and habitat fragmentation. Basic ecology tells us that fire is important in shaping vegetation structure, landscape patterns, and bird distributions throughout North America. "But we don't have a complete picture," says Victoria Saab, a research biologist at the Rocky Mountain Research Station. Saab organized a 2002 Partners in Flight symposium focusing on the issue of birds and fire and is involved in efforts in 12 locations in 8 western states to collect data needed to make fire management decisions that benefit birds. "We are just beginning to ask the questions needed to understand the consequences of changes in fire regimes for birds," she says.

Surprisingly few studies have been undertaken to quantify the effects of fire on birds. And a recent increase in research projects spotlights two things: how little is known and how complex the answers will be. To understand the consequences of decades of fire suppression, you first need to understand how natural disturbances have historically shaped a landscape. "One thing everybody has to keep in mind is that these systems are dynamic and always were," Saab says.

"Another problem," says Rodney Siegel, a research scientist at the Institute for Bird Populations, "is that the effects of disrupting fire cycles occur over a long time, creeping in slowly, and are therefore hard to measure."

Researchers speak of the need for a far more nuanced understanding of how fire cycles affect forests and a corresponding need to create equally complex management strategies. "You can't just talk about fire," says Saab. "There are many different kinds of fires, types of burn severity and fire frequency." Also, vegetation varies in its response to a blaze; ponderosa pines are hardy in the face of fire, whereas higher-elevation firs are killed by even mild understory fires.

CLIFF BEITTEL

It would be useful at this point to look at several fire-shaped habitats across North America and examine their differences. The diversity of climate and topography across the Rocky Mountains, for example, has led to a broad array of fire cycles historically, ranging from frequent, low-severity fires to occasional severe fires that kill many acres of trees. Fire suppression, grazing, and logging have disrupted this highly variable system, and now millions of acres are susceptible to uncharacteristically large and severe fires. Researchers say that the lack of information on the effects of fire on wildlife in the Rockies is a major stumbling block for developing ecologically sound fire-management policies.

The Sierra Madre Occidental in northwest Mexico is an area of extraordinary biological diversity, where long-needled pine forests have been severely damaged by several factors, including the disruption of naturally occurring frequent, low-intensity wildfires. The forests suffer from an increase in sapling density, creating an accumulation of forest fuel. Fires have grown far more intense and destructive in recent years. Studies are being conducted to measure the responses of bird communities to forest thinning and prescribed burning.

In the oak woodlands of California, ethnological and historical accounts show that Native Americans used fire as a vegetation management tool for thousands of years. Fire reduces shrub cover, the number of snags, and tree density; it also increases habitat patchiness. Habitat used by Western Kingbirds, Western Bluebirds, Violet-green Swallows, and grassland species benefits from shorter fire intervals, whereas species preferring dense woodlands may suffer. Researchers postulate that fires producing a mosaic of habitat patches provide for most species' habitat needs.

At many refuges and other federal or state owned lands, "prescribed burns" are regularly used to mimic a natural fire regime. Above, a brushfire is deliberately set.

GARY KRAMER

Across the central portion of eastern North America, deciduous forests provide habitat for more than 125 species of birds. Fire is widely thought to be one of the main factors in the development of the large expanses of oak forest and savanna documented in original land surveys. Now forests are shifting from fire-adapted oaks to other species, such as maples, and fire suppression is cited as one possible cause. According to researchers, a critical need exists for long-term studies to improve our understanding of the effects of different fire regimes on the bird populations there; they worry about balancing the management and conservation trade-offs, because, for example, short-term, frequent burning creates less suitable conditions for ground-nesting birds that prefer mature forest but provides favorable conditions for open-country birds associated with savanna.

Unlike many ecosystems in North America, the boreal forest in Canada still retains a natural fire regime. Researchers are studying how this natural dynamic will change (along with its related bird communities) with the introduction of common forestry practices such as even-aged management, which is similar in many ways to stand-replacement fires. Studies show, however, that bird communities associated with recent burns are very different from those associated with recently logged stands.

The vast grasslands of the eastern Great Plains and the Midwest, shaped and maintained through the ages by fire, have been significantly altered during the past two centuries. Grassland bird populations have declined at a greater rate and over a wider area than any other group of bird species. Fire changes both the composition and the structure of vegetation, favoring some birds more than others, and researchers are seeking management practices that are more sensitive to the requirements of various bird species.

On the sagebrush lands of the Great Basin, natural fire cycles varied from frequent low-intensity fires to infrequent higher intensity fires. Today, however, degraded and aging shrub communities dominate the region as a result of livestock grazing and intensive fire suppression. Many species of birds have suffered long-term declines. Although fire would seem to be a good management option to renew the habitat, cheatgrass—an invasive exotic grass species—can increase alarmingly following fire, sometimes precluding the reestablishment of sagebrush. Researchers have made it a priority to come up with answers to this dilemma.

Another complication in evaluating the positive or negative effects of fire on bird populations is the fact that the effects vary greatly for different species of birds. For example, even though Grasshopper and Henslow's sparrows are in the same genus, the two species respond very differently to fire in tallgrass prairie habitat. Grasshopper Sparrows do well where prescribed burns take place annually. But Henslow's Sparrows, which need taller, denser vegetation, require areas to go at least three years between burns.

Other subtle and not-so-subtle differences abound. In Illinois tallgrass prairies, Northern

Harriers tend to nest in areas that have gone some time without a fire, whereas Short-eared Owls are more common in recently burned plots. Dickcissels in Kansas and Oklahoma tallgrass prairies show reduced nesting success in burned areas. Other species, such as Eastern Meadowlarks, don't show a preference (although presumably in the long-term absence of fire they would be excluded as woodland takes over the prairie).

In California's Sierra Nevada Mountains, large tracts of mature forest are needed for species such as Spotted Owl and Pileated Woodpecker. On the other hand, areas with patchy openings and robust shrub growth are required by Lazuli Buntings and Green-tailed Towhees, and recently burned areas are used by fire-loving species such as Black-backed Woodpeckers and Mountain Bluebirds.

"Because some bird species benefit from certain types of fire and others need different conditions, it seems obvious that we need to manage for various scenarios: no fires, understory fires, and stand replacement fires [severe fires that kill most trees], and we need to take diversity in the size of burns under consideration, too," Saab says.

She cites the need for extremely hot fires that spread into the crowns of trees; these fires provide snags and increase the number of wood-boring beetles, making excellent nesting and foraging habitat for a number of birds, especially Black-backed Woodpeckers. However, light fires that remain primarily on the ground offer good conditions for species such as the White-headed Woodpecker.

Some birds use more than one habitat. Upland Sandpipers prefer to nest in unburned areas but forage in recently burned areas. Greater Prairie-Chickens use recently burned hilltops as lek sites because they provide good visibility for detecting predators and for male mating displays, but the birds prefer to nest in unburned areas.

Researchers point out that post-fire management practices can also affect birds. So-called "salvage logging" in which dead trees are removed (and sold) immediately following a fire has been increasingly targeted by environmentalists as being negative for many birds. In the Douglas-fir region of western Oregon, for example, studies have shown that approximately 20 percent of all bird species use these snags for nesting or foraging. In addition, many mammals, reptiles, amphibians, and insects use large-diameter fallen logs for feeding, shelter, and reproduction. One study found that Three-toed Woodpeckers may be particularly vulnerable to local or regional extinction if intensive salvage logging follows fires. On the other hand, recent research has shown that Lewis's Woodpeckers, which are aerial insectivores, can benefit from the more open setting that careful salvage logging can provide.

With a picture this intricate, combined with the fact that many of the new studies are still incomplete, some researchers hesitate to make recommendations to forest and grassland managers. "But we do have enough information to do a better job than we have been doing," says Siegel. "We can make recommendations based on a consensus that it would be good for the birds if we prevented the development of densely-packed, often stunted second-growth conifer stands that result from certain types of forest management. To maintain healthy and diverse bird communities, forests need a broad array of conditions distributed across the landscape." Although he refers specifically to western forests, other researchers offer similar assessments for other types of fire-dependent habitats.

GARY ROSENBERG

Although salvage logging—harvesting trees that have been burned by a forest fire—is bad for many bird species, it appears to be beneficial for Lewis's Woodpeckers (above). These birds are aerial insectivores and seem to do well in the more open setting that careful salvage logging can provide.

Historically, fire management has tended toward a "one-size-fits-all" approach, and there is a real danger that in the future, North America's complex array of forests and grasslands won't be managed for a correspondingly wide range of fire scenarios. Conservationists, birders, and ornithologists are still waiting to see whether the effect of new forest legislation proves to be beneficial. "The Healthy Forest Initiative [recent legislation addressing forest fire management] might not be a bad thing," says Kotliar, "but it could be a horrible thing if it is used to promote a fire regime that is too simplified. One and only one strategy is not going to meet the needs of all the species that are out there."

That's why additional monitoring is so important, she says. More funding has recently become available for such research through the Joint Fire Science Program, established in 1998 as part of the National Fire Plan. Although only a small percentage of the funds are used for vertebrate research, numerous collaborative efforts have resulted. But, says Kotliar, "we still need to make a better commitment financially to have effective monitoring." ■

Kristi G. Streiffert is a freelance writer based in Managua, Nicaragua. She frequently writes for this magazine.

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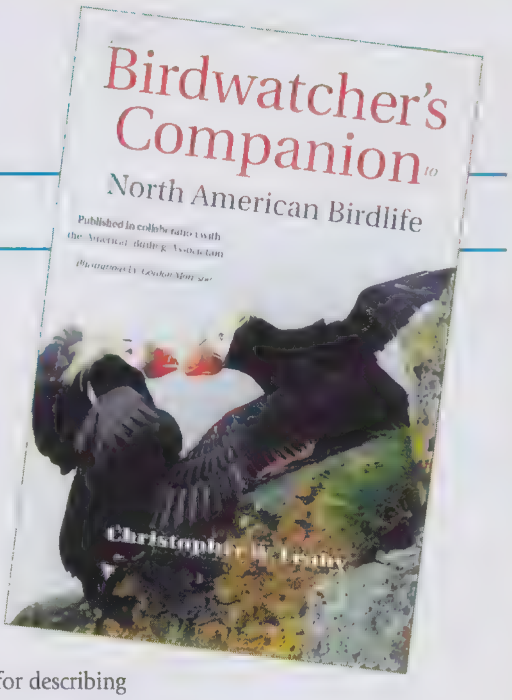

Chris Leahy. 2004 • Princeton University Press, co-published with the American Birding Association; 1,056 pages; cloth.

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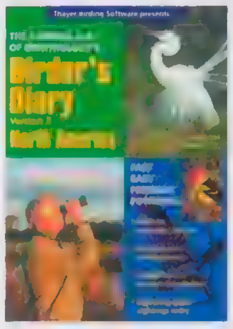

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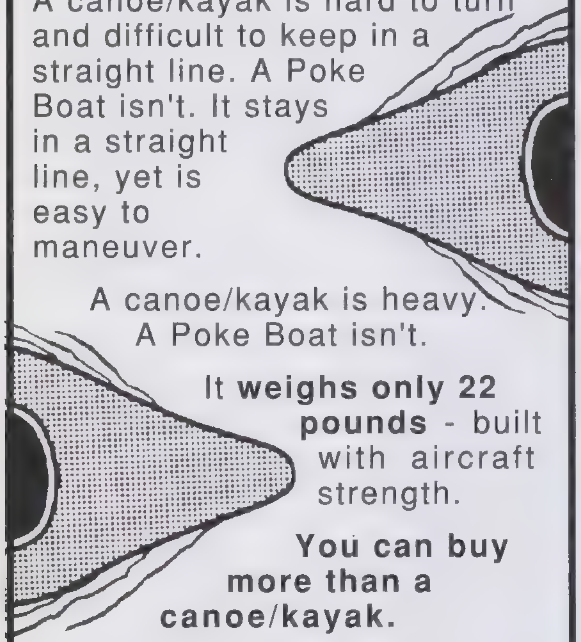

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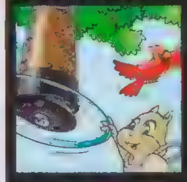

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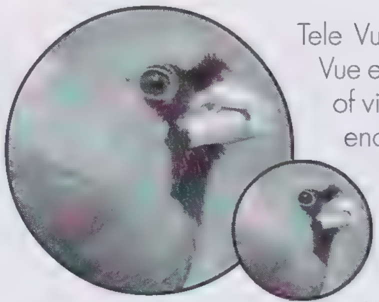

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A CONVERSATION

by Pete Dunne

SCENE: *The upper bench of the hawk-watch platform at Cape May Point State Park. A middle-aged, middleweight, middle-income birder, wearing a vest that is about 99 percent birding club/festival/destination patches, is reviewing the bird checklist. He is joined by another middle-aged, middleweight, middle-income birder wearing a cap studded with so many enamel pins that it resembles a multicolored hauberk.*

PINS: Mind if I sit down?

PATCHES: Help yourself.

PINS: Pretty fair flight?

PATCHES: Not as good as yesterday. Did you catch any of that? Peregrines galore. Be a shame if you missed it.

PINS [*stiffening a bit*]: No. I got in last night. But I was here for Saturday's flight. You must have heard about that. Set a record for peregrines.

PATCHES [*stiffening a bit*]: No. I was in Duluth. Set a record there, too. Best flight I've seen this side of Corpus.

PINS: Well, those peregrines last Saturday were flying bumper to bumper—in fact, there was a 15-bird pile-up over the bunker. Best raptor show I've seen this side of Veracruz.

PATCHES: Talk about congestion. The kettles of broad-wings over Duluth were so thick that the National Weather Service mistook them for a line of thunderstorms. They issued a tornado alert. The sky grew so dark that pigeons went to roost. The images of Maurice Broun, Dick Pough, and Roger Tory Peterson were seen in the swirling kettles by a dozen witnesses, and Frank Nicoletti ascended into raptor heaven (but he was back in time for supper).

A moment of silence follows. It stretches into a period of silence that becomes an uncomfortable silence.

PINS [pointing to the checklist in Patches's hand]: You a lister?

PATCHES [looking down at the checklist as if surprised to see it there]: Not really. You've seen as many birds as I have, it becomes pointless.

PINS: I know what you mean. Once you've seen them all [*the "like I have" is presumed*], you can just concentrate on enjoying them.

PATCHES [*trying to smile but succeeding only in making the corners of his mouth twitch*]: My philosophy exactly. I used to try and keep up with the lumps and splits but figured it was pointless. Now I just wait for the AOU to revise their checklist, download it into my computer, and figure (give or take a species of two) it's close enough.

PINS [*trying to smile but succeeding only in exposing his canines*]: Plausible idea, but I've got too many species under review. I've got records committees in a dozen states working nights. I think the South Carolina Records Committee is meeting this week. I hope my warbler sighting in I'on Swamp is on the docket, but, well, that's exactly my point, isn't it?

PATCHES [not even trying to smile]: Got something of the same problem. There's a bird of mine under review right now, apparently an undescribed empid that distinguishes itself by having no field marks at all. Nobody can decide whether it represents one species or three (and some authorities suggest it may be as many as eight). They'll work it out in time, but till then my list is in limbo.

Except for the grinding of molars, there is a moment of silence that becomes a profound silence that becomes an oppressive silence.

PINS: Hear about the . . .

PATCHES: Yeah, saw it.

PINS: Yesterday it was rediscovered in . . .

PATCHES: Saw one there before.

PINS: Jon and Paul think it might be one of the . . .

PATCHES: I read the email.

PINS: Well Kenn asked me what I thought, and . . .

PATCHES: You know Kenn?

PINS: Know him? He named his cat after me.

PATCHES: Well, I'm godfather to his laptop.

A period of silence ensues that defines the difference between mere silence and utter silence.

PINS: Well, I've got to go. I'm packing for a trip to Borneo.

PATCHES: Yeah, I got to go, too. I'm finishing up a manuscript.

PINS: Well, good birding.

PATCHES: Yeah, good birding to you, too. ■

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